THE CULTIVATOR:

A MONTHLY PUBLICATION, DEVOTED TO AGRICULTURE.

I KNOW OF NO PURSUIT IN WHICH MORE REAL AND IMPORTANT SERVICES CAN BE RENDERED TO ANY COUNTRY, THAN BY IMPROVING ITS AGRICULTURE.—*Wash.*

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THE CULTIVATOR.

TO IMPROVE THE SOIL AND THE MIND.

The Crops in the West,

Our correspondent at Black-Rock, writes, July 20:—"The crops all, save grass, which is tolerable, are enormous in this region. The world never saw, before, such crops in Western New-York, Ohio, and the great west, in the way of wheat, as this year. It will not exceed seventy-five cents a bushel west of this, if it is so much; possibly not over fifty to sixty cents. The millers will learn caution from their great temerity and losses, and the farmers, hundreds of whom are now lamenting over the last crop, for which they had refused high prices, will learn to take a good price when offered hereafter."

Mr. Colman's Agricultural Report.

There are some items in this report which we go back to notice; and,

1. "*The manufacture of Charcoal.*—The growth of Mount Washington is principally white birch and chesnut, with some maple and oak. A great business of the inhabitants on the mountain, and of many persons in the neighborhood, is the conversion of this wood into coal, of which 100,000 bushels are stated to be annually made. Two and a half cords of wood are required to make 100 bushels of coal. By good management, two cords will make 100 bushels. The wood standing is valued at from 50 to 75 cents per cord. A kiln of common size contains from 25 to 30 cords. The chopping of two cords for the kiln, is considered a good day's work for a man. Collecting and drawing together on good ground, requires five days. The covering of a kiln requires three days' work. The burning of a kiln is twelve days' work. The coal brings 12½ to 13 cents at Hudson, about 21 miles distance, or 5½ to 6½ at Riga ironworks."

We introduce this extract, for the purpose of suggesting some facts which may benefit both the burner and the buyer of charcoal, which has come to be an article of great consumption in our towns and villages. We have extensive ranges of mountains on the east, in Rensselaer, and on the west, in Schoharie, covered with wood, but too remote from navigable waters, and from large towns, to admit of the fuel being carried to market, except in the form of charcoal. When economically managed, this article is made a source of profit, although the transportation to market may be 20 or 30 miles. A farmer in Schoharie, living 28 miles from the city, informed us, that in seven years he has paid for a new farm, got a large portion of it under good improvement, and built comfortable buildings, almost exclusively from charcoal which he has himself made and marketed from wood growing upon it.

The interests of both the buyer and seller, require that charcoal be properly burnt. Of the seller, because, if properly managed, he gets a third more coal than when the burning process is badly managed, and has a more ready market. Of the buyer, because he gets a far better article. The value of charcoal is determined by its specific weight. A hundred *pounds* of pine charcoal is worth as much to the consumer as a hundred *pounds* of hickory or maple charcoal, though the former may exceed the latter in volume one-half. It is *weight*, not *bulk*, that determines its intrinsic value.—Hence it would be a wise municipal regulation to regard the standard of value by weight, taking care that the wood is thoroughly charred.

To obtain the largest quantity, and best quality of coal, it is necessary to exclude the air from the pit, while in the process of burning. The quality and quantity will depend upon this exclusion. If burnt without any covering, there would be little or no charcoal, and that little would be inferior. Hence it is essential, that not only the coal pit be well covered, and be kept well covered, but that the interstices between the wood be filled with some substance that will exclude the air, without retarding the burning process. Dr. Bull, whose excellent experiments and remarks upon this subject we cannot now lay our hands upon, directs, that these interstices be filled, as the wood is fitted in the pit, with the coal dust of former pits, a work of no great labor; and that this will not only give more coal, but better coal. Coal burnt in this mode will have a solid and brassy surface, a sonorous sound, and comparatively great specific weight—criteria which the buyer should especially look for. Charcoal badly burnt, will, on the contrary, exhibit a crumbly soft surface, a dark color, and be comparatively light.

2. *Marble quarries.*—Upon the eastern border of Berkshire, we meet with that extensive marble formation, which extends, in a direction nearly north and south, from Long-Island Sound to the northern boundary of Vermont, at Swanton; and the quarries of Sheffield, West-Stockbridge, Hancock, &c. are extensively worked. The marble for the Girard College, at Philadelphia, is obtained from the first named town; and blocks weighing from seven to thirteen tons, have been transported across to Hudson, 24 to 26 miles, by oxen and horse teams.

3. *The agricultural capacities of Berkshire* are great. With a district highly congenial to the rearing of cattle, and the extension of the dairy; within a short distance of navigable waters, and great facilities for transportation to market; and a soil highly favorable to root crops and coarse grains, on which to fatten them, the agriculture of Berkshire admits of great improvement.—The more cattle, the more manure; and the more manure, the higher may be the condition of the land, and the greater the return in arable crops.

4. *Domestic Economy.*—"In looking over my returns," says the commissioner, "I was struck with the remarks of a man of much practical wisdom, and one of the best farmers of the commonwealth. He says, 'that a farmer should produce upon his farm, all those supplies for his family, which the farm can be made to yield.'"

This is true in regard both to the individual farmer, and a nation of farmers. The more either subsist upon the products of their own labor, the more independent they are, and generally the more prosperous too. Mr. Colman remarks upon this good rule of olden times:—

"In his case this is done, within doors and without; for there the spinning-wheel has not forgotten to turn round, nor the shuttle to speed its flight. In this *cottage*, [we suppose the commissioner means *farm-house*,] whose neat and beautiful arrangements cannot be surpassed, the clothing, the bedding and the carpeting, were all the product of their own fields and flocks. I shall not soon forget the unpretending and hearty hospitality of these enviable dwellings. I have slept many a time under a silken canopy, and trodden many a carpet as soft as the pride of eastern luxury could make it, but never with any thing like the sentiment of honest pride and independence with which I saw here the floors spread with carpets made from their flocks, which for fineness and beauty the foot of a princess need not disdain; and on a cold night slept in woollen sheets from their looms, as soft as the shawls of Cashmere, [rather high colouring,] and wiped my face with towels spun with their own hands, from their own flax, of a whiteness as transparent as the drifted snow. In such beautiful examples of domestic management, it is delightful to see with how limited means the best comforts and luxuries of life may be purchased. Nor were these instances few. The county of Berkshire abounds with examples of this domestic comfort and independence. Much to be regretted will be the change, which has already invaded many parts of the state, where, under the pretence of superior cheapness, these household fabrics shall give place to the more showy but flimsey products of foreign industry; and the healthy exercise of domestic labor and household cares shall be deemed degrading in our wives and daughters, and exchanged for the idleness and frivolities of pride and luxury."

5. *Composts and Liquid Manures.*—The commissioner urges increased attention to manures, as "the very sinews of agriculture; its food; its life-blood." He recommends that manures be mixed with earths, in the form of composts, in order to preserve their gaseous and liquid properties. In this way, he says, the amount of manure is greatly increased.

The subject of composts is one of calculation. If manure ferments in the yard, or upon the surface, a great portion of its fertilizing materials are undoubtedly wasted. It is no less true, that if the fermentation takes place while the dung is in a commingled state, with earthy matters, that the earths will absorb, in a measure, the gaseous and liquid portions of the manure, and hold them, and when applied to the land, give them off to the growing crops. Judge Hecock, a former professor of agriculture, contends, that these composts should be in the soil of the field where the manures are to operate. That by this mode, the expense of carting the earth to the yard, and afterwards to the field is saved. Mr. Colman thinks they should be formed in the yard. Our opinion coincides with Judge Hecock's. We can have no more of the cat than her skin. The earths can only gain what the dung loses; and if the change takes place in the soil, the double expense of transportation is saved.

We contend, that all the dung of the stable and cattle yards should be applied, in spring, to hoed crops. If it has been spread over properly constructed yards, which retain the liquids, and the yard littered with the refuse vegetable matters of the farm, no hurtful fermentation will ensue before the dung is wanted for the hoed crops. But will this dung rot in the soil, it will be asked, in time to give food to the growing crop? We answer, yes. There is not a question that green vegetable manure undergoes a speedy decomposition when buried in the soil; and it is almost as apparent, that vegeto-animal manures, a term which Chaptal properly applies to the dung of animals which feed upon hay and like forage, will almost as speedily decompose under like circumstances, if saturated with the liquids of the yard, or other moisture, when buried. Judge Hecock made an experiment with dry straw. He buried it in a trench, and after covering it with earth, he planted melons, and had an uncommon fine crop. In the autumn, the straw was found to be perfectly rotted. We repeated his experiment, and with a like result. We have hardly a doubt, that where long manure is applied broadcast, and buried with the plough, it will rot, and feed the crop growing on it; and if not so efficient in the early part of the season, it will be more efficient towards the latter part than fermented dung. We manured a field of corn, part with manure which had been drawn out in the winter, and had undergone a partial fermentation, and part with coarse unfermented manure from the cattle yard, upon which fermentation had hardly commenced. The old manure gave the earliest growth, but the new manure gave the strongest after-growth, and at least one-fifth the greatest product in corn. Hence we consider all composts, made with manure which can be applied in a fresh state to hoed crops, as involving a useless expense of labor, without any corresponding return.

Where manure is drawn to the field sometime before it is to be used, or where it is not wanted for the spring crop, Mr. Colman's recommendation of mixing it with earth, or at least of covering it with earth, is undoubtedly proper. Again—where it is desirable to bring insoluble matter, as peat earth, into an available condition for crops—and where this cannot be sufficiently done by bedding the cattle yards with it, its admixture with unfermented manures, in the form of a compost, may be highly proper.

With regard to liquid manure, we have hardly yet begun to learn its value. The commissioner recommends the construction of water-proof vaults, or cisterns, under or contiguous to cow-houses. We have added contiguous, for we should prefer the outside rather than inside of the building, for the convenience of pumping the liquid into carts, when wanted, and for the greater convenience of conducting to it, from all the stables and sheds, the urine of the animals which they shelter. We do not like the suggestion, however, of housing cows during the summer months, with the view of saving their urine. It will be saved in the yard, if this is made concave, and kept well littered. Cows do not do so well in confined stables, nor so well tied, at a season when they are tormented with flies. "Doubling our manures," says the commissioner, "is quadrupling our crops."

Under the head of *Machinery*, Mr. Colman notices the Drill-barrows of Mr. Bushnell, of Sheffield, and of Mr. Metcalf, of Lenox; a Thrashing Machine made in Hinsdale, N. Y. and the smoke-house of Mr. Spicer, which has two apartments, one for the fire, and the other for the meat which is to be smoked.

In regard to smoking meat, our common mode is a bad one. We half cook it, as well as smoke it. The Dutch, and no people have better smoked meats, make their smoke in the cellar, and apply it to the meat in the garret. We do not want heat, but merely smoke, or the pyroligneic acid which the smoke contains, to dry and cure our meats. The desideratum, therefore, should be, to obtain the smoke without the heat, and this can only be well affected by employing separate apartments for the fire and the meat, and by conducting the smoke to the latter by artificial means.

Water-Works.—This is a contrivance, on the farm of Mr. Bassett, of Lee, for forcing up the water from a brook to the barn, similar, we presume, to one constructed at our neighbor's C. N. Bement. A three-foot head of water is raised in a small stream, which serves to turn a wheel, which carries a horizontal pump, and which latter forces the water, through pipes connected with it, up a hill of some sixty feet elevation, and discharges it into a tank.

There is subjoined to Mr. Colman's report, an appendix, containing several matters of interest, which we have not now sufficient room to notice. Among other things is an experiment, on two trials proving successful, of A. C. Metcalf, of Lenox, for preventing the ravages of the *Borer* on the locust tree.

The remedy is simply to wash the bole of the tree, in the early part of the summer, with spirits of turpentine. The trees soon lost the sickly appearance occasioned by the borer, assumed a healthy hue, and afterwards did well. Mr. M. thinks, that on a large scale, the spirits

of turpentine would prove equally efficient if diluted with muddy water, as it will not mix with that which is pure.

The cedar owes its exemption from insects and from decay, to its resinous properties, which are obnoxious to the insect tribes, and which exclude moisture. It is stated, that cedar has been recently dug out of the ground, on the site of ancient Utica, which must have been buried more than two thousand years, in a sound condition.

The English Agricultural Society,

Has just held its first anniversary meeting; and so far as we are enabled to judge from their labors thus far, the society is likely to prove of immense advantage to the nation. It appears from the first annual report, that there are already 1104 members of different classes; that its subscriptions amount to about $36,000; that ten prizes have already been awarded for prize essays to be read before the society; that an extensive correspondence has been opened with the agricultural, horticultural, entomological and statistical societies of Europe; that geological collections are being made, and the basis of a library laid; that the first number of a journal, containing their proceedings and prize essays was commenced in April last, &c. The report concludes with a list of prizes to be awarded, amounting to some thousand dollars, and of the prominent objects which are primarily to engage the attention of the society. Of the latter, the following are the heads:

1. Classification of soils.
2. Permanent improvement of soils.
3. Productiveness of seeds.
4. Manures.
5. Rotation of crops.
6. Stock.
7. Mechanics of agriculture.
8. Diseases of cattle and plants.
9. Grass farms.
10. Physiology of agriculture.

We note these heads as constituting the great points of improvement in the agriculture of every country, and particularly in the agriculture of the United States, and as calculated to produce, in the investigations to which they will lead, the highest advantages to civilized society. And we repeat the remark, in a hope of stimulating to the organization of a like society in our country, upon a liberal and enlightened scale, that the English Agricultural Society embraces men of the highest standing in the kingdom, in reference to rank, influence and science. With us, unfortunately, our great men are too much engaged in politics, in commerce, or in speculation, and either do not appreciate justly the importance of agricultural improvement, or have not leisure or patriotism to bestow proper attention upon it.

The Great Principles of Agriculture

Are the same every where. Animal and vegetable matters constitute every where the food of plants; and heat, moisture and atmospheric air, universally, the active agents of vegetable nutrition. With a knowledge of the truth of these great principles, it is the province of man to apply them, under the various contingencies of climate, soil, aspect and seasons. And this is a labor in which the mind, enlightened by science, and fortified in its conclusions by experience, can do far more than the hands. The cultivated mind, like steam-power, is a labor-saving principle, capable of performing, or of saving, an immense amount of labor.

The efficacy of Green Crops as Manure.

We do not remember to have seen a more successful experiment made with green crops as a manure, or a stronger proof of their great value, than was made by John Kelly, of Essex, Mass. and communicated by him to the agricultural society of that county. The experiment was made upon a sandy plain. The customary crops were from eight to thirteen bushels of rye, and from thirteen to thirty bushels of Indian corn per acre. Grass would not grow upon it. The green crop was charlock, or wild mustard, which sprung up spontaneously, and was ploughed under three times successively as it came into bloom. The land had been the three preceding years in corn, enough to exhaust good land. The charlock was ploughed under the 18th of June, the 7th of August, and the 14th of September; the seed was sown immediately upon the last furrow, as the ploughing progressed, and harrowed in. The piece contained one acre and thirteen rods, and yielded *forty-three bushels and three pecks*.

Mr. Kelly did not think the experiment *quite complete*.

"To render it more so," he says, "I would not turn a furrow after the dew had evaporated. I have no doubt but a large portion of that fertilizing quality in the soil, which, (during the summer months,) is continually exhaled from the earth, is by the dew brought again within our reach, and it would be wise to avail ourselves of the opportunity of laying it again in the soil. And in the second place, I would by all means use a heavy roller after each ploughing. It would fill all the crevices left by the plough, and by pressing the soil more closely to the weeds, at once hasten the decomposition, and very much retard the evaporation from the soil.

"But the land is not only very much enriched by the process. There is, I conceive, no method by which it can be so thoroughly cleaned. Three times during the season, a fresh surface is presented to the atmosphere, and each time, as the decaying vegetable matter increases in the soil, so is the exciting cause augmented to make a more vigorous effort. We have in this manner gone over nearly all our land which is infested with charlock, and the diminution of the weeds is quite sufficient to warrant the expectation, that in a few years it may be comparatively eradicated."

This is scientific practice—the reasoning of a rural philosopher—a cheap and sure means of cleaning and imparting fertility to an exhausted or poor soil. In regard to the utility of ploughing in the dew, we have been told of a case in point, which took place some years ago, in Pittsfield. A poor laboring man asked permission to crop a piece of ground belonging to a wealthy neighbor, which had been thrown into *old field*, as not worth cultivation. Permission was granted. As the applicant worked out upon hire, and could not lose his time, he contrived to do all the ploughing after sundown, and before sun-rise. His crop was a very fine one; and the fine product was attributed to the circumstance of the ploughing having all been done while the dew was upon the surface. These lessons should not be lost upon the reader.

The Circumscribed Farmer,

We mean such as possess a limited capital, and limited desire for improvement, except in their own way, often decline taking an agricultural paper, because it teaches nothing, they say, that is adapted to their practice, or that is graduated to their scale—because, in fact, it is not oral, and delivered by word of mouth, but has been subjected to the operation of the printing press.

Let us ask these gentlemen, if they were disposed to have their son learn a trade, or to become a first rate farmer, would they select a teacher of circumscribed knowledge, who followed the practices of the last century, or knew only how to *kill land*—or one who was familiar with all the improvements of the age, and whose thrift in business would be a guarantee that he *worked* it right? Now the agricultural journal is to the circumscribed farmer, what the good teacher would be to the boy—an instructor in the improvements and best practices in his business—written by those who have made and adopted them, and have profited by them,—and for the particular benefit of those who have limited means, or cannot go abroad for the information they need. The modern improvements in farming go to economize labor, or rather to render labor more productive and profitable, and to keep up the fertility of the soil—two objects of as much or of more importance to the circumscribed farmer, than it is to the one of more extended means. The man who takes an agricultural journal profits by the experience of hundreds; while he who takes none, can profit alone from his own, and from that of perhaps a few neighbors. The adage teaches, that two heads are better than one, the world over.

These remarks are preliminary to some extracts we are about to make from John Lorain, a philosopher and a first rate farmer, written for the special instruction of circumscribed farmers, to whose notice they are respectfully recommended.

"In this country, land is very cheap: an excellent ready cash market for the produce of the soil generally prevails. This offers every rational encouragement to the poor but industrious farmer, who depends principally on his own labor, and that of his family, for cultivating the soil occupied by him. He is but little affected by the high price of labor, or the idleness and insolence of workmen, which take place in every country where labor is scarce, unless the laws be oppressively severe.

"The principal reason why this class of farmers so seldom become wealthy, and but too frequently continue poor, is the desire of immediate returns from cropping, and the mistaken idea that the profits to be derived from rearing live stock, progress too slowly to answer their purposes. This induces them to crop the soil yearly, with but little attention to grass or an increase of cattle, until their grounds become so much exhausted that rest is absolutely necessary to procure crops worth gathering. The soil being greatly impoverished, and the seeds of the grasses destroyed, as far as perpetual ploughing and cropping can effect this ruinous purpose, the grounds rest with no other covering, but that of some scattering and debilitated grass and weeds. This exposes the soil to the very injurious action of the sun, wind, washing rains and melting snows. When such grounds are ploughed for crops, instead of being richly stored with grass roots, and well covered by their tops, scarcely any vegetation is found to replenish them, or to nourish the crops grown on them.

"These ruinous practices naturally introduce poverty of soil, and its inseparable companion, poverty of purse. This, however, is not all: it entails on posterity the wretchedness introduced by their inconsiderate forefathers, or an Herculean task to counteract the curse of poverty, which their negligence had introduced. Whether Satan is also the instigator of this evil, I do not presume to determine, but certain I am, that it is much greater, (so far as farming be concerned,) than the curse entailed on the soil by the fall of Adam. That seems to consist simply in brambles and thorns, including in these, such other vegetation as would compel man to earn his bread by the sweat of his brow. This curse we may all see is irrevocable, but we may also, at the same time observe, that if man complies with heaven's mild decree, and removes those obstacles to the growth of plants, which better suit his purpose, agriculture nourishes, and his rational wants are abundantly supplied.

"But when the hand of folly introduces the additional curse of poverty on the soil, this insatiable monster, like Aaron's serpent, swallows all the rest. Even brambles, thorns &c. (the mild chastisement of heaven,) cannot prosper where poverty has obtained dominion over the soil, as may be readily seen, for this and every other vegetation grown on such grounds, looks sallow, starved and debilitated.

"That man is inexcusable, and ought to be punished for this sin against common sense, himself, his posterity, and the community in which he resides, is evident.

"Before this inconsiderate being enters the forest, glade or prairie, nature had been for ages enriching the soil for his use, in the way that has been described. The fertility of it might be preserved and increased, even by the circumscribed farmer, if a system of agriculture calculated to keep the ground fully replenished with decaying animal and vegetable matter was practised, and due attention were paid to the augmentation of live stock, in proportion to an increase of ability, instead of the ruinous practice of perpetual ploughing and cropping.

"Reason, alone, demonstrates this interesting fact. It has also been clearly proved by actual practice, in almost every neighborhood, by the successful enterprise of farmers, who commenced their business on lands bought on credit, and covered with timber, without any buildings on them, and with not more than a pair of working cattle, and cows barely sufficient to supply the family with butter and milk. Nay, more—some who were not half as well stocked as this, have paid for their land, acquired an extensive stock of cattle, and become wealthy, although their mode of management was very inferior to that which has been proposed. They, however, increased their live stock in full proportion to the means furnished by the system of management employed by them.

"From first to last, they have been enabled to live better, and vastly more independently, than those who relied principally on the plough. The cause of this is evident: milk, butter, cheese, wool, meat, hides and manure, are continually increasing. It is evident that but little manure can be obtained in the beginning, however, where that little is spread, the product is greatly increased, as is also the fertility of the soil for a succeeding crop, and the grasses following it. Where a plenty of good grasses and hay prevail, young cattle will grow as much or more in one year, than they do in two when kept on pasture, fed bare during summer, and on straw through the principal part of the winter.

"It is considered proper to remark that, although many circumscribed farmers make considerable progress in increasing their live stock, their laudable enterprise, however is too often suddenly checked, before they obtain half the number of domesticated animals necessary to the proper cultivation of their grounds.

"This evil originates in the prevailing error, that huge piles of stone and mortar, or boards and scantling, are the best means that can be pursued by the cultivator to improve his farm. Hence it is, that we see almost in every part of Pennsylvania, where it is possible to effect this mistaken improvement, extensive barns and dwelling-houses standing on farms, where we do not observe half the quantity of grass, or number of cattle, necessary for the proper cultivation of the surrounding soil."

The Northern Shepherd,

Is the title of a 12mo. volume sent us by the Kennebeck Agricultural Society, for which we tender our thanks. It is a report made to that society, by a committee appointed for the purpose, upon the diseases and management of sheep. It is divided into three parts, the first on the mangement of sheep, prefaced by a short description of the various kinds among us; the second on the diseases of sheep; and the third miscellaneous. From the cursory examination which we have been able to give to the work, we think it will serve as a valuable companion to the sheep-master and shepherd.

There are some general principles laid down and inculcated which we think important ones, and which we propose briefly to notice; and although we do not intend to go into an argument to prove them to be sound, we think most of them are so palpably true, that the reader will only need to be reminded of them to approve and adopt them in practice.

Wool, and not mutton, being the great object in Maine, a preference is given to the Merinos; and hopes are expressed, that by a judicious attention to crossing, the grand point of improvement aimed at will ere long be obtained, viz. a Merino fleece upon a Bakewell body.

The South Downs seem to rank next to the Merino, as having the next finest fleece, as affording excellent mutton, and as possessing a hardiness of constitution, and a vigor and activity, which enable them to support and to thrive upon bleak and barren hills, where the Dishleys would die from exposure or starve.

"*Sheep should not be kept too high*," says the report, "unless intended for the butcher; for it is believed to be a true maxim in regard to them—'once fat and never fat again.' If they once become fat and are suffered to fall away, it is difficult getting them so fat as they were before they began to grow poor." p. 27.

High rocky pastures are much the best for sheep.—"Nature, it seems, designed the sheep originally for a mountain animal; and although man has by art changed its nature in a surprising degree, yet he has not been able wholly to thwart her views, and the sheep loves still to feed on the hill top and cliff, where there is a pure and exhilarating breeze, and where it can shelter itself under the shade of trees, or a projecting rock, during the heat of our sultry dog-days. A high pasture should therefore be devoted to your sheep."

Salt and tar should be given to sheep.—"A piece of salt may be laid in a trough, and the sheep will lick it as they please, and if some tar be added to the salt, it will be a benefit to them, as tar is a very good stimulant when taken into the stomach, and it prevents annoyance from the different species of flies." We would recall to the recollection of the reader, the mode of administering these as practised in Spencertown, and published in our second volume. A log is hewn upon one side, which is then turned uppermost. It is then perforated upon the hewn side, with hole made by a large auger, two or three inches deep. The holes are then filled with salt, and the hewn surface smeared with tar. In obtaining the salt, which the sheep are permitted to do as often as they desire, their noses become daubed with tar, which prevents the fly from entering the nostril.

Shelter during stormy weather, at all seasons, is considered indispensable to the health of the sheep, particularly after they have been shorn. "So tender and delicate is the skin of the fine woolled sheep, and so close are their fleeces, that there is great danger of pelt-rot being occasioned by too great exposure to the chilling influence of long and cold storms."

Sheep should be brought to the barn, in autumn, in good order.—"They are thus fitted to withstand the rigors of winter much better, and they will be carried through this inclement season with much less care, and more economically than they can be if they are poor and emaciated when winter sets in." This is true of all farm stock.

Sheep require the stimulus of distension—they should be filled with something that they will eat. When fed upon green grass, a sheep consumes eight pounds a day. If this grass is converted into hay, it weighs but two pounds, and the two pounds constitutes its winter ration. To ensure health, the six deficient pounds should be made up in water, vegetables or other food.

Pine or hemlock browse, are recommended to be given to sheep in winter. "I have for near thirty years," says the writer of a part of the report, "made use of hemlock boughs as the cheapest green food." It may be added, that the resinous qualities of these boughs, promote the health of the animal and prevent disease.

Sheep should not be turned to pasture too early in the spring—"for it takes their appetite from their fodder, and as they cannot graze enough to fill them, they lose flesh fast."

Sheep should not be crowded in sheds, nor huddled together in one spot too long; "as that," says the book, "I am confident, has produced disease in my flock. In one instance, I have no doubt the pelt-rot was thus produced, and nothing saved the whole flock from the scab, but a timely application of oil to the sheep."

Open sheds are the best shelter for sheep.—If kept dry, the wind is desirable, though cold. It preserves the purity of the air, and promotes health.

Under the treatment in March it is remarked—"Take good care of your sheep this month, that they may be able to bring forth their young the better during the next." And under the treatment for April it is urged, to "make the sheep eat as much green food as possible each day. Grass is the best, if you have it; next to that potatoes. This month tests all the rest, as regards ewe sheep, for he who raises the greatest number of lambs from a given number of ewes, is supposed to be the best shepherd, all other things being equal."

We pass over the second part of the work, which treats of the diseases of sheep, and content ourselves for the present with making the subjoined extracts from the miscellaneous part.

"*Salt.*—I have mentioned that salt was considered by the Spanish shepherds as essential to the health of sheep, and this sentiment is very general in every part of Europe except England, whose situation renders the air sufficiently salt.—The same consequence from similar causes takes place here. Upon Long-Island, and elsewhere near the sea, the cattle require no salt, nor manifest a desire for it; whereas north of the Highlands, they eat it ravenously, and it is thought essential to their health. The ancients also entertained similar sentiments upon this subject. Aristotle prescribed one peck every five days, during the summer, to one hundred sheep. We should consider this a large allowance, but it would be readily eaten. They also observe, that, however good your pastures may be, the sheep will tire of them if not changed, unless their appetites are kept up by salt."

"*Transitions from high to low food.*—With all stock, it is allowed to be very dangerous to pass very suddenly from high feed to that which is scant and poor; or from plenty of green food to that which is altogether dry. Hence arises a very important maxim in respect to sheep; which is, as soon as the pastures fail, towards the end of autumn, to put them to turnips or cabbages, if we have them; and this will perhaps be found our best system with respect to turnips, to sow a sufficient quantity for our sheep, to be eaten after the grass fails, and before the snow falls, so as permanently to cover the ground."

Essex Agricultural Society's Transactions.

We always turn to these with a certainty of finding much to instruct, and something to amuse us. The transactions of 1838, which are now before us, are rich in matters of interest to the farmer and to the country; and we hope to serve up to our readers some acceptable repasts from their contents. We shall begin with extracts from the address delivered before the society at its anniversary meeting; and the sentiments which these contain, we are persuaded, will be heartily acceded to by every honest republican, who is not led astray by the phantom of speculation, or who is not bewildered in the mazes of party politics.

The scope of Mr. Withington's address, he remarks, may be expressed in the following propositions and questions, embracing the great problem now before the public mind.

Proposition I. The majority must rule.
II. The majority must toil.
III. All professions must be open and free.
IV. The majority, to rule well, must be intelligent and virtuous.
V. How shall we make them so intelligent and virtuous as to choose the toilsome professions and rule well?

We pass over the first four pages of the address, to the following

EXTRACTS.

Yes—to be a good republican it needs faith: it is necessary for the prelusive experiment. It is well known, for ages past, the MASSES of men have been rising. Ever since the establishment of corporations and boroughs in the middle ages, in every political convulsion, the result has been to increase the influence of the many and diminish the oppression of the few. Our government is one of the last efforts of these long operating causes; it was established, not for a few families, not for a titled aristocracy, not for a king, but for him that drives the chisel and him that holds the spade; and it supposes the possibility of that dubious and much-doubted attainment in human nature,—that he, who earns his bread by the sweat of his brow, may yet be a thinking being; choose his own religion and make his own laws, as well as obey them. History perhaps has very little to produce this faith of which we have been speaking. Our brightest visions must be borrowed from the future. Our hopes are founded on what man *may be;* not on what he *has been.* We read, it is true, of ancient republics; but they resemble us only in a generic name. There never was a republic that *went for man;* or was founded on the rights of man. They all formed a conventional idea of the citizen; and never went for that inheritor of will and reason, that responsible being, who derives his immortal gift from, and is accountable chiefly to God. Why should we be forever talking of Athens and Rome; of Athens with its 20,000 citizens and 400,000 slaves; of Rome, not only with its slaves, but with its myriad of idle citizens, fed from the public treasury, and where we are told, even before the age of Cicero, there were not more than 2,000 citizens who had what might be called an estate. Were these republics founded on the rights of man? Were their partial experiments, when fully unfolded, calculated to produce much confidence in our own?

The soul must animate the body; the plan must go before the execution; the theory must guide the action: and confidence in what is possible and true must inspirit the perseverance that leads to success. We often hear it lamented that so many evils should mar the beauty of our rising morn. Ah, these clouds! these fogs; these curtains of darkness over the rising sun! The mob; the radical; the popular delusion; the impracticable plan and the still more absurd execution; the libel; the inflammatory press; the sage that will not write and the fool that will; the midnight caucus and the premature nomination, the demagogue in office and the general spread of political corruption; a surplus revenue in the midst of national bankruptcy; and the dreadful shakings of credit in the commercial world; the jealousies between the opposite parts of our republics; the jostling of the wheels in our delicate and complex machine; all these are evils—earthquakes, which shake our moral ground; and yet it seems to me the *chief* evil of these mortifying calamities is not seen. The chief evil is, that they go to destroy that confidence in the permanency of our institutions, which is of itself a part of their spirit. Every bad election; every wild experiment; every mob in a great city; every act of political injustice, tends to destroy that *faith* which is at once the spring of our activity and the source of our salvation. If I can discern aright the signs of the times, we are now in danger from a wide-spreading skepticism respecting the stability of republican institutions, and even the value of liberty itself. It is the dry-rot, which has seized the beams of the building, from the sills to the ridge-pole; and however silent in its progress, is seen in its mortal effects. It is astonishing how many are infected with this criminal distrust. It quenches all enthusiasm; it destroys all principle; it leads to political corruption; it makes parties a mere contest for place; in a word, it cuts off the stream of action in its head-spring, and leaves to the citizen, in his prospects, a dreary and fountainless waste. Alas! this political infidelity has crept from heart to heart, until it has become more extensive than we allow ourselves to confess. How different is this spirit from that of the last generation! Then all was credulity, principle, confidence, enthusiasm. Every oration, on the fourth of July, was filled with the most fulsome promises. A great empire! A free people! An intelligent majority! Wise rulers! The best of laws! A new example! An imitating world!! Such were the first visions of a new born nation. Now the note is entirely changed. Presumption has been followed by despair; and it is to be feared, that as some disastrous facts have weakened the principle, so the weaker principle may produce new facts, still more disastrous, until exertion ceases and liberty is lost.

The cures of those evils are many; but a very important one must come from a well-prized and well-regulated *agriculture.*

Society has often been compared to a pyramid, which owes its durability not only to solid materials, but to its skilful shape. Agriculture is the base, the ground is the fruitful mother of the best of our comforts. And it is necessary, for the welfare of any nation, that the majority of its citizens should follow the profession of tilling it. It produces the raw material. Thence come the bread and meat and wool, which nourish and clothe our bodies. It is the silent steward of the Great Father of nature, offering a kind of temporal omnipresence to the solicitations and wants of its inhabitants; various in its gifts, permanent in its location; reasonable in its restitutions and most just in its rewards." No man that was willing to cultivate the earth and thence derive his support by the sweat of his brow, ever perished by hunger, and no nation, whose citizens kept the ranks of this profession proportionably supplied, was ever known to perish by wars or treasons, or commercial confusions, by banks or bankruptcy; by discontents and factions within, or by invasions and foes from abroad. Not that following agriculture is itself a virtue, or forsaking it essentially a vice, but a due replenishing of this employment is an indication of a healthful state in the public sentiment. It shows that the foundation of the mountain is broad, and that the top thereof, though lofty, may alike defy the electric fires and the sweeping winds of the summer and the winter cloud.

Such is the imperfect character of our most solemn investigations, and so greatly are we blinded by party spirit and passion, that whenever we are called (as we think) to oppose and overthrow any public institutions, we inflame our zeal by exposing all their defects and allowing none of their excellencies. Never was there a revolution when the merits of a conquered dynasty were carefully estimated by the victorious party. Even in institutions where the balance of evils is on the whole great, it is always found, when they are abolished, that some unthought of benefit, is lost, by a removal; nor is it until long after the excitement of the change is passed away that mankind can foot the account and fairly estimate the exact magnitude of their loss and gain.

So it was in our American revolution. We rejected the institutions of Great Britain. We threw off those aristocratic chains, they were binding upon us. We altered the foundations of society; and liberty started on a new career of more daring experiments. She was wider in her sweep; deeper in her franchises; more radical in her maxims. She professed to comprehend all men in her offered privileges and blessings. It was freedom in manners as well as in laws; her powerful sun, now in the meridian, was to melt away the last floe of restrictive ice and set every human creature on the career of wisdom as the waves dance together on the sea in equal space and freedom. But it is now found that this universal *enterprise* has its evils. There is danger, that the necessary professions should not be kept full; that multitudes should forsake the plough for the pen; that the splendid professions should be chosen rather than the useful. I have some suspicion that, in our present constitution of manners, even the multitudes of colleges in New-England may be an evil, certainly no man should hope to hide his laziness under a pretended love for literature and religion.

* * * * *

There is another evil. No heterogeneous composition can last. We have retained the *ideal* of the old system with the form of the new. They are destructive of each other. There is a silent spirit, which tinges our fancy and tinctures all our ideas of gradation and eminence. It still seems to say that one profession shall be more honorable and profitable than another, while at the same time, in theory and in practice, we throw the doors wide open and make all alike accessible to every class. The consequence is, there is a pressure to those which are esteemed the more desirable professions. Enterprise and honor are confined to narrow channels. An anecdote will explain what I mean. Two advertisements were recently published in a neighboring city; one for a clerk in a store; the other for an apprentice to learn the blacksmith's trade. The number of applicants for the former place was *fifty;* for the latter *not one.*

But how shall we avert the evil? It is certain we cannot reverse our republican institutions; nor restore the ancient ranks. Some plan must be devised within the sphere of manners, more suitable to the spirit of the age; more gentle in its operations; more salutary and healing in its effects. To elucidate this point is our main inquiry.

In the *first* place, then, we must bring our manners and our political theory more into harmony. Our creed must sanction our practice, and our practice must be in conformity to the spirit of our creed. We must not attempt to put the *new wine into old bottles; else the bottles break, and the wine runneth out and the bottles perish;* or, in plain language, the republican spirit must be put into the republican forms; and we must be content to take the system, the whole system and nothing but the system, with all its blessings and attendant evils. If all men are born free and equal; and all professions are alike honorable, then *say so* at once; and leave the balance of the relative numbers to be regulated by the relative profits; as it certainly will be, if not controlled by these subtle, colouring ideas, inherited from other ages and antiquated systems. Two grand ideal powers are now brought into mental collision, and are shooting their moral ammunition across the Atlantic. On the one side, our theory is deeply felt among the powers of Europe. It produced the French revolution; and is still producing a deeper revolution, though silent, in the vision of eastern politicians. On the other hand, their commercial monopolies, their institutions and manners are exercising a deep influence over us. It is felt in the traveller; the summer visitant, the steamboat; their newspapers; their debates; their titles; their reviews; their wit and their metaphysics. Even the late coronation of the queen Victoria was not without its effect. The whole system of commercial wants and supplies grows up from these social forms and supplies them. Every cargo of fashionable goods creates a taste and leads to an expense unfavorable to republicanism. For my part, though no friend to sudden innovation, and wishing to place myself as far as possible from the spirit of modern radicalism, I am compelled to say, that it is my wish, that everything, in this western world, should radiate from one great central idea; that we might have republican manners; republican fortunes; republican architecture; republican books; and republican eloquence; that everything might be latently blended with that spirit, which hails the improvement and recognizes the equality of man. Let the central altar be built with unpolished stones and be tinged with the crimson of our own rustic sacrifices.

Education too should take a shape from our public prospects. Every father and tutor should educate his son or pupil with reference to the condition, which his country imposes and the duties she requires.

* * * * *

Thirdly. The human mind is, after all, governed by some very fine and invisible threads, which, though delicate in their texture, are strong in their effects. There is a latent impression of elegance, grace, beauty, which a young man gets early in life, from a thousand indefinite causes, powerfully determining him in the choice of his profession. Woe to that man, who sees, in his youthful morning, the rainbow settle on the wrong hill: and is doomed to pursue it through life over unfordable streams and up impracticable heights. There is an idea of *the beautiful* in morals and in life, *to kalon*, the fond image from which emanates our strongest desires, and around which play our brightest dreams of felicity. It is this, which coloring all the operations of reason; governs the man; decides his choice; inflames his energy; increases his skill, and gives him the elements of success. One man finds it on the ocean; another on the land; one in war; another in peace; one in science; another in poetry. Petrarch had his Laura: and it has been seriously doubted whether she ever had flesh and blood, whether she ever existed out of poetry; whether the bard did not embody his own fancies and give to *an airy nothing a local habitation and a name.* In a certain sense, every man has his Laura, who fills his imagination, and leads him through life. Every man has some ideal of perfection and happiness after which he always reaches, though never grasping; and which modifies his pleasures and his pains from his cradle

Justissima tellus is Virgil's fine expression. II. Georgic. 459 line.

to his tomb. In vain does reason speak; in vain does experience warn; in vain may you balance against his ideal visions the collected utilities of life; if a man does not, in some degree, reach his contemplated goal, he is poor in the midst of abundance, and wanders a wretch through the world. Nor is it the young and imaginative alone that are governed by these ideal forms; the most cool and avaricious feel their power. *Their* Laura is not the same as Petrarch's; they will not write sonnets to her praise—certainly not *such* sonnets—but their views are just as ideal; and the phantom they pursue assumes her beauty and her power, solely from her relation to their temper and taste. It is not the material gold that absorbs the miser's lust, to him, as to other men, it is worthless dross; it is the ideal of being a rich man; it is the laurel of a Crœsus shading his dwelling and adorning his tomb.

If a certain style of living seem essential to our happiness; and in the competitions of life, we are left to fall short of it, no philosophy, and I had almost said, no religion, can save the strongest mind from a degree of disappointment.

Now it was the policy of antiquity to give agriculture the first place among the professions; I allude not to pastorals; that retrospective pleasure with which, from the courts of princes and in an age of refinement, men look back upon incredible scenes of virtue in Elysian fields of bliss. But the most sober calculators, the orator and the historian, delighted to relate the story of Cincinnatus, passing from his plough to victory and from victory back to the plough—*triumphatis agricola*. The possibility of uniting the highest mental qualities, with that practical skill which makes the *desert blossom like the rose*, was strongly inculcated. It was the leading article of ancient faith; and must be so again. The man, who makes agriculture, not merely productive, but honorable; who surrounds his farm with the images of the most attractive happiness; who dwells in a neat abode, such as republican wisdom might build and republican simplicity ought to desire; who, in addition to the song of the robin, can make the music of contentment flow around his calm abode, can unite it with the intelligence of a citizen who knows his right and is determined to defend them; who knows that *this business* is favorable to mental culture and as fair a road as any to political eminence; such a man does more to encourage the profession than all other causes combined. He touches the springs of action in their centre and blesses his country and mankind. He plants the laurel beside the plough, and allures thousands to come, and after having toiled within its fragrance, to sit beneath its shade.*

There is still a *fourth* expedient. The return of those, who have been disappointed in the learned professions or commerce, to agriculture, and being happy in the return. Your father's farm!—it supported your cradle and may perhaps be destined to inclose your grave. I am aware, that these resumptions of an old employment have not always been successful. The body long disused to labor, melts beneath the summer sun; aches as it follows the plough; and the soft hand, which has worn the glove, becomes blistered as it handles the pitchfork or the spade. The stillness, too, of a country life, so soothing at a distance, becomes tasteless when it is the forced choice of men, who have trod the mart and been honored in banks. Even the song of the robin, which warbled so sweetly in pastorals, becomes harsh discord when a man hears it from a house, under a heavy mortgage; and it is the only music, which his poverty can afford. But let us not be discouraged; life is a conquest over difficulties. These returning farmers; these prodigals, who, having spent their substance, at last go home to their father's house: these shipwrecked mariners on the golden sea of fortune, who swim to the shore on the last shivered plank—after all, have some advantages. They have increased their skill; they know mankind; they have seen the world; and should they be endowed with genius and glow with a new ambition—what discoveries might they not make! Though the triumphs of mechanical skill have as yet been chiefly confined to manufactures, and some say can never be exhibited in agriculture, yet as an offset to this advantage, there is the composition; the improvement of soils. What a field is here open! How little do we know of it! How important the pursuit! How rich the reward! All the difference there is between ten bushels of corn to the acre and an hundred, is before us to awaken our invention and activity: and suppose a Newton, a Davy, a Franklin, a Whitney, to be thrown on such exigencies, how would the treasures of nature be opened! How would the best spots for the largest crops be sought out and found. Let no man despair of reaping his substance in his last days from the rugged earth, who retains either of those best instruments, a healthful body or a vigorous mind.

My fellow citizens, I rejoice, on the whole, in the exhibition of this society, and believe its tendency to be good. It reflects credit on the wisdom and philanthropy of the men who support it. Any thing that turns our attention to the great foundation of our social happiness, must be beneficial. But, I am deeply impressed with the conviction, that we need a revolution in our ideas of public and private life.

The road of enterprise must be new laid—new paved—and conduct to other objects. We are still misled by certain ideas of refinement and felicity descending to us from the Gothic ages. The public hive must have more working bees and fewer drones; and what is of equal importance, the drones must cease to engross the profits and the honors. The late concussions in the commercial world are not without their moral. They point to a different source of prosperity. Instead of thinking that all talent is to be employed on the sea or in speculation, we must turn it to a new channel; it must guide the plough; improve the soil, and carry agricultural skill to its last perfection. We shall always be an enterprising nation; I hope we shall always be a moral one. But that enterprise must flow in a wider channel; that morality must be founded on a better faith. Perhaps it would not be impossible to describe the circle that bounds the last expansion of the republican idea. When two young men, entering on life with equal abilities and virtues, would not turn up a copper for the choice of a profession to ensure their future success and distinction, then, and not till then, will the republican idea be carried out to its full perfection.

REMARKS.

The root of the evils complained of, and which seem justly to have excited the doubts, if not the fears of the orator,—the want of faith in the permanency of our republican institutions; the general rush to the learned and mercantile professions, for fame, fortune and fashion,—the idol Laura; and the neglect of rural pursuits,—the root of these evils, we think, lies in the defects of our system, or rather want of system, of agricultural education. Give to rural, the education which we give to professional labor,—improve the mental powers of the agriculturist, too, as you do those of the lawyer and doctor, and you will raise him to the same scale in society; and surely when this is done, there are too many substantial inducements to rural life, to apprehend any serious deficiency in its labors. Education, if it cannot, like the lever of Archimides, be made to move a world, can be made to move and model its inhabitants Education has a controlling influence in after life. It makes men Christians, it makes them Mahometans, it makes them Jews, it makes them Pagans; it makes them ministers, doctors, lawyers; and, had we professional schools of agriculture, as we have of law, divinity and medicine, it would make thousands farmers,—intelligent, useful farmers—real working bees. But, alas! we have no professional schools for the farmer—nothing to enlighten his mind in his business, which is the great business—*emphatically* the great business of our republic. We profess to have adopted the *principles* of equality, while we are fast running into the *practices* of aristocracy. We impart to the few, in our system of education, facilities for lording it over the many. Hence, the great tendency thitherward, and hence, the importance of the great agricultural class in the right management of our political affairs.

We are strongly of the impression, that the establishment of professional schools of agriculture, in which the mind as well as the hands should be instructed—and particularly as normal schools for the instruction of teachers, would in a few years work a salutary revolution in the habits and fashions of society, and avert many of the foreboding evils with which our republic is threatened.—*Conductor.*

Method of using the Chloride of Soda.

A translation of A. G. Labarraque's method of using the chloride of soda, has been kindly sent us by Jacob Porter, the translator. This chloride is the most powerful disinfecting agent known, and has been found of great use in dressing ill-conditioned sores, and as a means of purifying unhealthy places, and disinfecting animal substances. It is sold in a liquid form, at the apothecary's by the bottle. It is used diluted with water. A bottle of the liquid, which costs but a few cents, will serve a family sometime, for disinfecting the air of vaults and other foul places about dwellings, purifying the air in sick chambers, in cellars, &c. Its great utility in lazarettoes and hospitals, and, in Asia, in preserving from the plague, seems to have been tested and proved by officers of the French government. At this season, it is peculiarly beneficial. We subjoin some of the directions for its use.

"For ill-conditioned ulcers let a glass of the chlorated liquor be mixed with five times its quantity of pure water, and in this mixture dip the lint with which the ulcers are to be dressed. The dressings should be applied twice a day. If the sore become red and inflamed, this mixture should be still further diluted, if, on the contrary, the sore does not change its appearance, it should be dressed once or twice with some chloride with only half its quantity of water, so as to bring on a slight inflammation, which is indispensable for causing atonic ulcers to pass to a state of simple sores. The healing will then go on rapidly. At the time when the chloride is applied to the ulcer, the fœtid smell is destroyed.

"Gangrene, hospital putrefaction, ill-conditioned burns and scalds, old syphilitic ulcers, corroding herpetic affections, and the like, should be treated in the same manner.

"Cancer in a state of suppuration may be disinfected with some lukewarm or cold water, containing a twentieth of the chloride soda.

"For ulcerations of the nasal organ, the throat, the palate and the gums, the chloride should be diluted with eight or ten parts of water. It will, nevertheless, be necessary to touch these sores with a little lint moistened in some pure chloride.

"For the scald, head the chloride should be mixed with only an equal quantity of pure water, and the parts affected be moistened with this liquid twice a day.

"Great advantages have been obtained from using the chloride very much diluted in water, for all the purposes of the toilet. In a dose of from 25 to 40 drops [not to be taken internally,] it acts as a bracing and preserving wash, prevents the spread of herpetic eruptions, and cures certain diseases of the skin.

"The air of sick chambers, and the patients themselves, may be purified by mixing a spoonful of the chloride and six spoonfuls of water in a plate, and setting it under the patient's bed; indeed, several plates with the diluted chloride may be placed in the same apartment if necessary. In this way the exhalations may be destroyed as soon as they are produced. It will be necessary to renew daily the chlorated water contained in the plates.

"In all places where there is a crowd of men or animals, whether sick or healthy, the air becomes corrupted, and acquires deleterious properties, owing principally to the animal exhalations. These exhalations may be destroyed by sprinklings of the chloride, diluted in from 25 to 30 parts of water; or by setting in these places (and they may be out of sight,) some vessels containing the chlorated water, which can never be in the least injurious, whatever may be the quantity. This method of purifying the air is indispensibly necessary in lazarettoes, hospitals, prisons, poor-houses, manufactories, churches, seminaries, convents, halls of study, and dormitories in colleges and boarding-houses, cabins of ships, court rooms, crowded theatres, saloons when filled to excess on great occasions, and the like.

"Sprinklings of the chlorated water will be more especially necessary whenever an epidemic or contagious disease prevails; they should be made in order to guard against the deleterious influence arising from the neighborhood of marshes, the rotting of flax, hemp and the like. They will likewise be serviceable in the diseases of domestic animals, in places where silk worms are raised; finally, in all places where the air becomes charged with exhalations, which, on being accumulated, produce fatal effects.

"In cases of asphyxia, produced by the exhalations of vaults, sewers, or any considerable masses of putrefying animal substances, it will be necessary for the patient to breathe the concentrated chloride; and his chamber should be sprinkled with the chlorated water, so as to subject him to the influence of the disinfecting agent.

"It is often necessary, sometime from a tender, pious feeling of regret, to preserve for a long time the bodies of deceased persons. A fœtid odor appears more or less readily, according to the temperature of the air, the state of the patient's body at the time of his decease, or the disease that terminated his life. This decomposition may be suddenly arrested; indeed, it may be prevented by sprinkling the body with some chloride diluted with water. For this purpose a bottle of chloride should be mixed with twelve bottles of water; in this mixture a linen cloth should be wet, laid on the body, and sprinkled occasionally with the liquid."

Influence of Climate upon Seed.

We received, last spring, twelve ears of Dutton corn from Mr. Osborn, of Oswego county, his residence differing from ours, in latitude and altitude, about two degrees. We planted with this seed eight rows across our field, the residue being planted with seed of our own raising. The Oswego corn tasselled two weeks earlier than that from seed raised in Albany, thus showing six or seven days' difference for a computed degree of latitude, in the earliness of the crop—the northern seed giving the earliest crop in a ratio inverse to the forwardness of the spring. This will serve as a hint to farmers in districts where corn is liable to be cut off by early autumnal frosts, to obtain their seed from a more northern latitude, or from a district of higher altitude.

Hussey's Patent Reaping Machine,

Is exciting considerable attention in Maryland, and it has been recommended by the Philadelphia Agricultural Society, and by a society in Maryland. A Maryland correspondent speaks of it as follows:—

"I know not whether the news may not have already reached you, of a new mowing machine, invented by Mr. Hussey, which adapts itself to all surfaces, up hill and down, not encumbered with stones and stumps, and doing its work better than can be done by hand, to the amount, in a day, of what four of the best cradlers could accomplish. The executive powers of this machine are very credibly vouched by a Mr. Carroll, who has one or more of them in use on a large farm. His moving power is a pair of strong horses. Before the thing can reach perfection, we must employ the electro-magnetic impulse, which your last legislature thought no humbug."

12th Anniversary of the American Institute.

The annual exhibition will commence on the 7th of October, at Niblo's Garden, in Broadway, New-York. The contributions from exhibitors will be received on Thursday, Friday and Saturday immediately previous. The anniversary address will be delivered on the evening of the 10th October. The Silk Convention will be held on the evening of the 11th; and a ploughing exhibition will take place at Harlem on the first Thursday of September, at two o'clock P. M. We intend to give the address of the Institute in our next number.

Sales of Short-Horn Cattle.

It will been by our advertising page, that a sale of the Messrs. Allens fine stock of Short Horns will take place at Tonnewanta, near Buffalo, on the 10th of September, and that a sale will also take place at Powelton, near Philadelphia, of several imported animals, belonging to the celebrated herd of Mr. Whitaker, of England, on the 20th of September. The Messrs. Allens have taken much pains to procure the best stock to breed from, and from the appearance of their herd two years ago, we have no doubt they have succeeded in rearing superior animals.

An Idler

Cannot bear to be inquired of as to his daily business. Every answer to such a question is to him a subject of self-reproach. He has either attended to no business, or to the business of others.

AN INDUSTRIOUS MAN

Will answer such interrogatories with pleasure. His

* After all, mankind, especially the young, will be governed by their ideas of the beautiful more than utility, in politics, morals, religion, and general life; nor would a benevolent man wish to exterminate this fundamental principle of our nature. But there is all the difference in the world, between conventional beauty, the beauty of fashion and expense, and that, which is simple, natural and eternal. Let us look at a few particulars: a rich shawl to a young lady's eye is beautiful, so is a rose. But the one is a conventional beauty, the other a natural. The one lasts while the fashion lasts; the other, i. e. its essential beauty, until flowers shall be no more. Take the fluctuations of female dress: sometimes its beauty depends solely on the fashion; sometimes it approaches to the everlasting laws of nature. The old stays and high-heeled shoes of Queen Ann's day, were mere conventional beauties; the Grecian dress is natural and essentially beautiful. Now it seems to me, what we are to seek is—that cheap, simple, essential beauty, which promotes the progress of mental refinement, but never leads to the expense which plunges families and nations in ruin. Let the conventional and natural meet in one line of inseparable union.

responses will imply self-approbation: he has been employed in providing for the wants of himself and family, and perhaps doing good to others.

The idler is the drone which lives on the public hive, but adds nothing to its stores.

The other is the laboring bee, which works not only for itself, but for the commonwealth.

Let the young imitate the latter, if they would not, like the drone, become worthless outcasts.

Capacity of Rain Water Cisterns.

The following table, showing the number of gallons of water contained in cisterns of the diameters mentioned, for each foot of their depth, is copied from a communication in the Farmers' Cabinet.

Diameter.	*Gallons in 1 foot.*	*In 10 feet.*
5 feet,	120,	1,200,
6 "	170,	1,700,
7 "	230,	2,300,
8 "	308,	3,080,
9 "	390,	3,900,
10 "	480,	4,800,

So that a cistern 6 feet in diameter, and 10 feet deep, will hold 1,700 gallons, or fourteen hogsheads.

THE BUDGET.

Silk Reel.—It is out of our power to give to Mr. Geo. Bigelow the advice he asks of us in regard to silk reels, not having used any, though we have no hesitation in saying, that the silk business will ultimately do well, where it is managed as a family concern.

We have had several inquiries for the constitution of the New-York State Agricultural Society. We have complied till we have not a copy left, and till we are unable to procure one for publication.

Several correspondents have asked our opinion as to the best machines and implements, as threshing machines, straw cutters, cultivators, drill-barrows, &c.—These are delicate questions to answer, especially as we have personal experience with but few of those which are offered for sale. All we can do is to speak well of those we know to be good. This we have done freely. But we cannot speak of the comparative merits of those which we have not tried. Mr. Pitts, of whose threshing machine we have spoken in high commendation, is now located in Albany, and we have referred the inquiries relative to his machine to him in person.

Acknowledgment.—From W. Donaldson, a description of the Swartaria Mining District, illustrated by diagrams.

CORRESPONDENCE.

Plans and Estimates for Farm Dwelling-Houses.

Distrusting our own judgment in this matter, we placed the several Plans and Essays on Farmers' Dwelling-Houses, which we had received, in the hands of an eminent disinterested architect and builder, and an intelligent farmer, to examine them, and advise us which was best entitled to our premium. After carefully examining them, the gentlemen have given it as their opinion, that the plan submitted by JOHN CAIN, of East-Clarendon, Vt. on account of its greater convenience, good proportions, and economy of structure, is entitled to a preference; and we therefore award to Mr. CAIN our premium of TWENTY DOLLARS, in such article of plate as he may select. The plan of Mr. JEWETT, of Weybridge, Vt. having been considered the second best, we tender to Mr. Jewett a bound set of five volumes of the Cultivator, as a gratuitous premium.

As the competitors have been at considerable labor in furnishing us plans and estimates, and as, moreover, different persons may select different models, according to their means and their taste, we publish them all, omitting the details of the estimate of the cost, except Mr. Cain's, which we give entire, as the price of materials will materially vary in different districts. The estimated aggregate of cost is, however, stated at the foot of each communication.

If this effort to improve our farm dwelling-houses, to render them convenient, and to economize the cost, shall, as we think it will, afford useful hints to those who intend to build, and serve to lessen the burthen of female labor, in the discharge of domestic duties, we shall feel happy that our premium has been productive of public good.

East Clarendon, Vt. March 18, 1839.

JESSE BUEL, Esq.—Sir—I am by profession an architect and builder. I have built a great many dwelling-houses, but for the last five years past, I have been entirely employed in planning and superintending the erection of meeting-houses in this state. My place of residence is in the town of Clarendon, but I am at present superintending the erection of a splendid meeting-house in the town of Danby, (Rutland co.) and while here, a friend has let me have the number of the Cultivator for April last, in which I find a premium of $20 offered for the best plan of a farm house, to cost from $1,500 to $2,000. Supposing, as I do, that such plans as may be sent in will be inspected by a committee appointed for that purpose, and should I be aware that such committee were architects, I should not enter as competitor, because they might give preference and premium to one of their number, through friendship. But as I am of opinion, that the committee appointed to decide on the merits of the plans, specifications and estimates presented, will be composed of gentlemen having higher and better motives than favoring friends against merits, I therefore send you enclosed four plans, three ground and one elevation plan; also, a specification or description of the manner the several parts of work shall be done. With the plans and specification, I also transmit to you an estimate of the expense of building, embracing the several kinds of work and the different materials.

Supposing that a small house, tolerably well finished, would be more acceptable to farmers generally, than a large one not so well finished, I have adopted 40 feet long and 28 feet deep, (or wide,) with an addition in the rear 24 by 20 feet. My great object has been to have all the convenience possible in a house of the above size, and a strict regard to proportion. And I flatter myself, that the enclosed plans, for cheapness in building, convenience and proportion, will be found worthy of a candid perusal. I only regret, that I cannot present and explain them to you personally, to remedy which, I must give a particular description of the several parts. I would here remark, that as a cellar is of great importance, particularly to a farmer, I have taken all pains to make it convenient, and have divided it by interior walls, which adds much strength to the floor above, as well as convenience below.

SPECIFICATION.

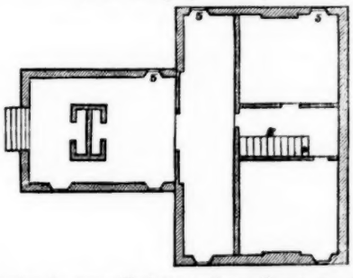
Stone Mason's Work.—If the soil you select for the site is wet, swampy or moist, dig low enough to evade the frost, and fill the trench with cobble stone, hammered down solid, upon which erect a cellar wall laid without any mortar, to the surface of the ground, which would probably be five feet; from thence up lay in mortar. Let the walls be two feet thick, and eight feet high, leaving spaces after getting up to the surface of the ground, for cellar windows, perpendicular to the windows of the principal story. Be careful to have none of the stone project outward, where the frost may affect, because such stone must either break or raise the whole fabric.

Carpenter and Joiner's Work.—The timbers composing the roof ought to be got out to such a size as not to be too weak, and at the same time not too heavy, or they will have a bad effect on the walls. The doors to be six pannels, with mouldings on both sides the principal doors, and on one side of the more obscure ones. The doors entering into the two front rooms on the principal story, to be cased with philacters; those not attached to front rooms and lobby, to be cased with a plain casing, with a returned $\frac{3}{4}$ths laid on the edge, and an one inch Grecian ovelo for land moulding. The windows to have check rail sash, and the frame grooved to receive parting lands; sash 1$\frac{1}{2}$ inches thick.

I have made the plans and estimate, &c. for a brick building, the walls to be one foot thick.

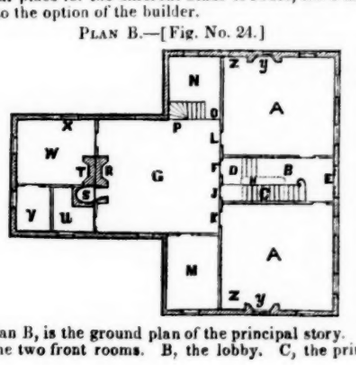
As my business is such, I have not now time to give a proper specification; suffice it to say, that in my estimate I have calculated the price of materials as they could be obtained in the town of Rutland, Vt. as in different parts of the country the price would vary, and even in neighboring towns. I have, also, in making an estimate of the cost of building a farm-house according to the enclosed plans, calculated on a plain, good workmanlike building.

PLAN A.—[Fig. No. 23.]



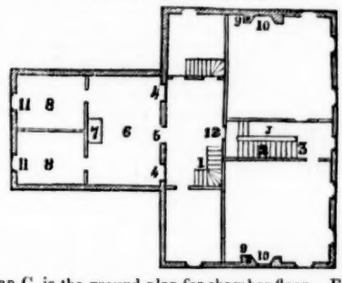
On plan A, you will observe, the walls are two feet thick. It is the ground plan for foundation wall, and shows the openings for the windows, and one opening for an outside door, with the steps to descend to cellar. S is the stairway that lands in the kitchen. The particular place for the different kinds of sauce, &c. I have left to the option of the builder.

PLAN B.—[Fig. No. 24.]



Plan B, is the ground plan of the principal story. A, A, the two front rooms. B, the lobby. C, the principal stairway, landing on the square platform D, which platform is seven feet above the lobby floor, so as to admit a passage underneath from front entrance E, through the doorway F, leading into the kitchen G.—The stairs are built on a geometrical construction, turned on a cylinder at H, and continuing from platform D, three steps, and landing at I, on plan C. The doorway marked J, leads to the cellar stairs, which go down underneath the principal stairs. K and L are doorways leading from the kitchen to the two front square rooms. M, a bed-room. N, a bed-room, with its door leading into the kitchen at O. P, the doorway and stairs (as back stairs,) leading into the room Q, on plan C. R, S and T, on plan B, are fire-places for kitchen and back kitchen. S, the oven. U, the buttery. V, pantry. W, back kitchen. X, back door. Y, Y, fire-places. Z, Z, cupboards.

PLAN C.—[Fig. No. 25.]



Plan C, is the ground plan for chamber floor. Fig. 1, the stairway to the garret; 2, that portion of principal stairs seen from lobby, 3, with the three steps landing at J. The rear part of the house is intended to be only one story high, which admits the windows, 4, 4, above the roof of said back part, to light room Q. 5, is a doorway leading into room 6, which is over part of the kitchen; 7, kitchen chimney; 8, 8, bed-rooms; 9, 9, the flues of the fire-place, on plan A; 10, 10, fire-places for the two square chambers; 11, 11, two windows in gable end of rear part. The room 6, to be lighted by two sky-lights, laid level with the shingles, with zinc or lead round the frame, to prevent leaking; the glass to lap as the shingles do, or as the roof of a hot-house. The remainder of plan C will explain itself, the rooms being bed chambers.

PLAN D.—[Fig. No. 26.]

Plan D, is an elevation view of the end of front part, and side view of the back part. A, the door marked X on plan B, and B the chimney 7 on plan C. C, the marble water table. D, underpinning, or that portion of the cellar wall seen above the surface of the ground at E, E, E. I should have shown the cellar windows, marked 5, 5, 5, on plan A. F, F, are the garret windows, the chimney brought up between them I have not drafted a front elevation view, supposing that the plan B, with the front entrance door and two windows each side, and plan C, with the five windows placed as they are, will show all that is required.

Some of the advantages or conveniences of these plans are, having the kitchen so near the centre of the house, and the buttery and two bed-rooms so convenient to the kitchen; also, having the cellar door and back stair door lead out of the kitchen, and having the square rooms, A, A, as dining room and sitting room so convenient to the kitchen. I would here state, that from platform D, on plan B, to doorway 12, on plan C, there must be three steps, as at I, on plan C.

ESTIMATE OF THE EXPENSE OF MATERIALS AND WORK, *as they could be obtained in the town of Rutland, Vt.*

68,000 brick, at $4 per thousand,	$272 00
Laying 68,000 brick, including board and tending, at $2.25 per thousand,	153 00
200 bushels lime, at 25c. per bushel,	50 00
800 bushels sand, at 2½c. per bushel,	20 00
6 boxes glass, at $3. 12½ per box,	18 75
7 cwt. nails, at 6¼c. per lb.	43 75
9,000 feet lath boards, at $4 per thousand,	36 00
5,000 feet lining boards for floors, at $4,	20 00
(If the floors were single and matched, the cost would be about the same, the work of matching being extra.)	
5,000 feet spruce floor boards, at $10 per 1,000,	50 00
2,500 running feet of rafters and joist, at 1½c. per foot,	37 50
800 feet square timber, at 3½c. per foot,	28 00
20,000 pine shingles, at $2 per 1,000,	40 00
Brads, locks, latches, hinges, screws, &c.	30 00

10,000 feet pine stuff, at $20 per 1,000,.....	200 00
104 feet marble water table, at 25c. per foot,..	34 68
150 feet marble window sills and caps, at 34c. per foot, ...	50 00
2 set polished jambs and mantles, at $10 each,	20 00
2 set common do. $4 each,.....	8 00
Plastering, including board and tending,.....	50 00
Painting, do do	75 00
Carpenter and joiner's work, do	500 00
178 perch of stone wall, the laying of which, at 50c. per perch, including board and tending,	89 00
Total,.....	$1,825 68

The above doth not include the getting out and drawing of stone for basement wall, as the expense would depend on the distance, &c.

I have not time at present, to make an estimate on the cost of a wood building, no further than to remark, that here, where pine clapboards are $15 per thousand, besides drawing ten to fifteen miles, and as a frame building would require more nails than a brick one, and the work of framing and covering extra from a brick house, would cost about as much as the laying the brick; and it is my opinion that a brick building of the size and description herein mentioned, would cost from $150 to $200 more than a frame building, finished equally as well. Yours respectfully,

JOHN CAIN.

Weybridge, Vt. January 17, 1839.

Mr. Buel—Sir—Perhaps you could not direct the attention of the farmer to a subject more interesting and useful, and one that would originate so many different opinions, as the elevation and ground plan of a farm dwelling-house.

The inquiring mind and critic may say that the style is either too plain or too expensive—some would admire a story and a half, others two—one may want a fire-place in each apartment, and others would prefer stoves. In choice of materials, some would prefer brick, and stone or wood; and finally, in an edifice of this nature, we are more apt to seek for the discovery of some inconvenience and faults, than we are to give credit for the good.

That others may be induced to present some better drawings, I take the liberty to offer the following, which you may submit for the consideration of your honorable committee, which is the drawing of the ground plan and front view of a wood dwelling-house, 30 by 38 feet, two stories high; a building in a direct line attached in the rear, 20 by 30 feet; two wings, on each side of the main building, 19 by 20 feet. It may front either to the east or west, by inverting the ground plan. The whole plan may be diminished in size, and nothing in the plan prevent the main building being erected only one story and a half. The cellar under the main building laid with stone four and a half feet, the remaining two and a half feet a vacuum in the wall round one inch wide, is best done by raising the two and a half feet on the inside by a course of brick, which vacuum prevents the penetration of frosts to the cellar. In the first place, the farmer's wife considers it very important, that the kitchen should be convenient to each apartment above and below. I would recommend a flue leading from the fire-place to the cellar, to conduct the ashes into a vault which may be so constructed as to make a safe and convenient smoke-house.

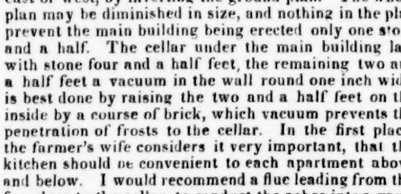
The cost of the materials depends on the country where it is erected. Wood, brick, stone, iron, and mechanical labor can be obtained in this section as cheap as any part of the United States. A house of this description can be finished in good, comfortable style, for fourteen hundred dollars.*

In giving the dimensions of the rooms, I have made no allowance for the walls and partitions. Respectfully yours, SOLOMON W. JEWETT.

EXPLANATION OF THE CUTS.

Fig. No. 27, represents the ground plan. Fig. No. 28, the elevation of the front view.

[Fig. No. 27.]



No. 1, Kitchen,.....	19 by 18	feet.
2, Parlour,.....	19	20
No. 3, Sitting-room,.....	11	14½ feet.
4, Library, &c.....	14½	20
5, Bed-room,.....	11	8
6 and 7, Bed-rooms,.....	7	9
8, Pantry,.....	11 by	5
9, Cheese-room,.....	11	18
10, Wash-room, &c	9	18
11, Wood lean-to,.....	12	20
12, Cellar and chamber stairs,....	3½	11
13, 14, Piazzas,.....	4½	20

A, Kitchen door. B, Front door.

C, Oven and fire-place, with an arch attached in the wash-room.

D, Hall and stairway, including two closets, 10 by 19 feet.

⊙, Fountain of water.

* Mr. Jewett subsequently sent us his estimate for wood, brick and stone, and for the two latter materials the cost is estimated at $1,450.—*Cond.*

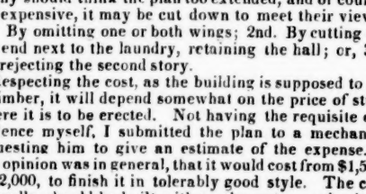
[Fig. No. 28.]

Princetown, N. Y. February 1, 1839.

Mr. J. Buel—Dear Sir—I have been looking for some time past, in very new number of the Cultivator, for a farm dwelling-house making its appearance, for the best plan of which you offer a very liberal premium. But I have looked in vain, and as the year has almost expired, I begin to think that surely none has been offered. Building is always attended with heavy expenses, and when badly planned, much of the comfort and convenience, which would otherwise have been enjoyed, is lost, to say nothing of the money uselessly expended. Rather than that your good intentions in a matter of so much importance should be frustrated, I have concluded to send you a plan (such as it is,) to commence with; for if architects will not condescend to do the work for us, we must *try* to do it for ourselves. If it meets with your approval, so far as to think that it will warrant the expense of publication, others may be induced to point out its defects, suggest improvements, or offer a better. If any should think the plan too extended, and of course too expensive, it may be cut down to meet their views, 1st. By omitting one or both wings; 2nd. By cutting off the end next to the laundry, retaining the hall; or, 3d. By rejecting the second story.

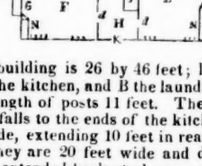
Respecting the cost, as the building is supposed to be of timber, it will depend somewhat on the price of stuff where it is to be erected. Not having the requisite experience myself, I submitted the plan to a mechanic, requesting him to give an estimate of the expense.—His opinion was in general, that it would cost from $1,500 to $2,000, to finish it in tolerably good style. The cellar walls, should be built with good mortar, and raised two feet above the ground, and the cellar divided into two apartments, one of which is to be solely appropriated to dairy purposes.

[Fig. No. 29.]—Ground Floor.



The main building is 26 by 46 feet; length of posts 22 feet. A, the kitchen, and B the laundry, are each 18 by 20 feet; length of posts 11 feet. The wood-houses, C, C, are too-falls to the ends of the kitchen and laundry, 10 feet wide, extending 10 feet in rear of the building, where they are 20 feet wide and double roofed; (they may be extended back at pleasure;) openings inward, the openings in front furnished with neat doors. E, sitting-room, 16 by 18. F, F, two rooms, 12 by 16 feet each, with folding doors separating. H, hall, 10 feet wide. I, stairs, 4 feet wide. G, continuation of hall, 6 feet. K, front door, 4 feet. d, d, d, d, doors. L, pantry, 8 by 8. M, store room, 8 by 14. N, N, N, N, N, closets. 1, 2, cistern and sink in laundry. 3, 4, cistern and sink in kitchen. 5, 5, 5, doors to cellar. .... dots, shows the places for the windows. 6, fire-places. 7, oven.

[Fig. No. 30.]—Second Floor.



A and B, two rooms in front, 16 by 18 feet each. C, clothes room, 10 by 10. D, D, D, D, bed-rooms, 9 by 10 each. e, e, e, &c. doors. f, termination of stairs. g, winding stairs to garret. 1, 1, chimnies.

[Fig. No. 31.]—Front View and Elevation.

1, 1, Cellar windows. 2, 2, Front openings of wood-houses, with doors. 3, Wood-house running back 10 feet in rear of building. 4, Laundry. 5, Kitchen.

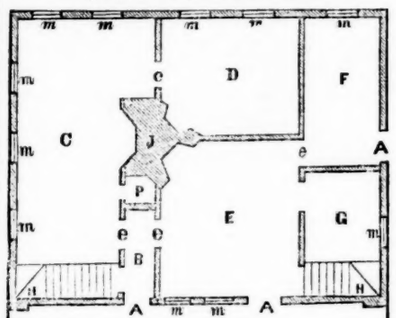
JAMES SMEALLE.

Farmington, Conn. January, 1839.

Judge Buel—Dear Sir—I send you a plan of a farm house, not so much for the purpose of competing for the premium you have so generously offered for the best, as to make it the foundation of some thoughts I wish to offer on the subject of buildings, generally. Before I do this, however, I will go through with my plan, and must frankly say of it, that it has nothing to recommend it but convenience. Architects will condemn it for want of regularity, order, and due proportion. I can only say to this, I am no mechanic; the great objects to be gained are, utility, adaptation to the use for which it is erected, suitableness to the wants of the class occupying it, economical in expense, &c. If, with these essential requisites, the mechanic can present a plan with more fair proportions, more beautiful in appearance, and more substantial, he shall have my thanks. Without these, he ought not to have the thanks of any. But to the detail.

Accompanying this, I send you two drafts; one of the ground floor with its several apartments and references, the other its elevation, with a side view of its entrance and a veranda attached, on a scale of one-eighth of an inch to the foot. The estimation of expense is calculated on more windows than the draft presents, so they may be reduced if desired.

[Fig. No. 32.]—Ground Floor.



A, doors. B, hall or passage. C, front room. D, bed-room. E, common room. F, store room. G, pantry. H, stairs. I, chimney. e, inside doors. *m*, windows. N, posts sustaining veranda. O, steps. P, closet.

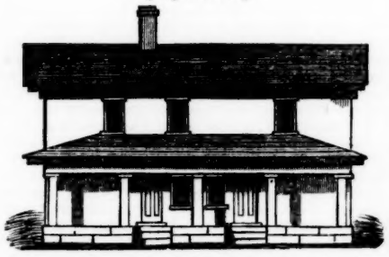
It has five apartments on the ground floor, and a small landing place, or hall, viz:—a sitting room, a common room, a bed-room, a pantry and a store room. Can any one of these be dispensed with? All are necessary—all are convenient to one another, of suitable size, and well adapted to a family carrying on farming. The objections are, the sitting or parlor room is not well proportioned, and the division between the common and bed-room comes too near the fire-place, causing or placing the fires in the corner of each room. To these it may be replied, that the end of the sitting-room next the stairs may be fitted with a sliding partition, for a library for the family, and thus make the room in due proportion; and the sleeping-room may be fitted without a fire-place, and warmed by a stove, and the chimney placed near the centre of the side of the common room. The entrance to be on the south side, on account of the northern blasts of winter. In the view, I have presented a veranda, extending along the whole southern side, exhibited as adding to the convenience and appearance of the house, although not included in the estimate, and not considered absolutely necessary; but for the comfort of shade in summer, and some protection from storms in winter, considered very desirable.

The second story to be divided into six sleeping apartments, (or more if thought necessary;) and here I would say, I should prefer having but one story to a house, but for the greater economy of two, the same amount of roof (the most expensive part of our buildings,) covering twice the amount of space, compared with a one story house. The stairs to the second story have their entrance from the hall, and a second flight from the common room, and then into the cellar under the last, the entrance from the pantry. The store room

may be converted into a cheese room by dairy farmers. The size is 39 feet by 30, (varying according to the number of the family)—sitting-room 15 by 25 feet—common 15 by 18, and sleeping 15 by 12—pantry and store-room 9 by 12½ each. Three entrances, two on the south side, into the landing place, one between the sitting and common room, one into the common room, and one into the store room; there are 3 or 4 windows to each story on the front or end standing to the west on the plan, and as many as needful on the northern side and each end; one chimney, which can be reduced in size if stoves are contemplated for warming the house.

The cost, including cellar and painting, built in a plain but substantial manner, estimated at the market price of mechanic labor and materials for the whole, falls a little short of eleven hundred dollars, but say in round numbers $1,100. I think that although the price of materials and perhaps labor may vary in different sections of our country, the cost of such a structure will not much exceed that sum in any part of it.

[Fig. No. 33.]



And now to the main object of my communication.—I have long looked with regret upon the habits of my countrymen, of estimating the present cost of any structure they are about to build, without extending their views to posterity. Cheap buildings, that will answer for the present, with perhaps a little ornament for outward show, is the rage. This is eminently so in building bridges, houses, barns and out-buildings. Now it seems to me, that economy alone would dictate to him who is to build, to take into consideration durability as one of the first elements in his calculation, and if he finds that a stone structure, which will endure say only thrice the length of time of a wood building, at from one-eighth to one-quarter increased out-lay at the outset, will, in the end prove much the cheapest; and add to this, the trouble and vexation attendant on building, which every generation must go through, if we follow up our present habits, gives greatly the advantage to durable structures. I have been led to make a calculation of the comparative expense of an entire wood building, with one of stone, and I find the difference is not by any means so great as is generally believed. I estimate, in the plan I have presented, the cost of timber, boards, nails, paint and labor necessary for the outside of such a house, and which would not be used in one of stone, to be $245. The cost of stone for walls and labor for the same, would be $320. The roof and the material for the inside will be equal for each, so that the difference is the small sum of $75 I am aware that the expense of stone will vary according to the facility of procuring them; but when we take into consideration the fact, that small stone of almost any shape, well laid in good lime, will make as good walls for buildings as any other, and that but few sections of the country but that have them in quarries or scattered over the surface of the soil, the expense will not be so greatly variant as we should at first expect. I have estimated the cost per perch of stone, including laying, at $1.50, but a house has recently been built in this vicinity, which cost but $1.12 per perch. I think, therefore, that $1.50 per perch may be a fair estimate, in ordinary circumstances, of the cost of stone work for buildings—and who can doubt the greater durability and comfort of such houses? Let the moss covered cottages of our father land, which have from generation to generation stood firm and undecaying monuments of the wisdom of our ancestors in building, speak for the first; and for the proof of their superior comfort, a neighbor of mine built a stone house fifty feet square, which he has sufficiently warmed for the two past years, at an expense of $25 per year in wood fires. It is true he used stoves, but he attributes, as one great cause for this saving of fuel, the imperviousness of his walls to the cold air. If this is true, that stone houses need so much less fuel to warm them, and I cannot doubt the fact, the saving of fuel alone would pay the extra expense of stone houses.

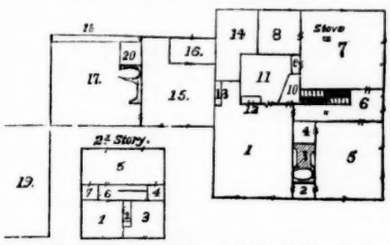
But I am extending my communication farther than you can spare space to occupy, and I will forbear, only suggesting a thought or two regarding roofs. Shingles are becoming scarce and inferior in quality, and we must look for a substitute. Slate are expensive, liable to break, and I suppose not quite tight; (of this, however, I have no personal knowledge;) and in casting about for a good covering, sheets of zinc have appeared to me to be a desirable article. It has one good quality, at least; it will not rust like tin. Cannot some of your correspondents tell us where it has been tried, and how well it answers? Such knowledge would be very desirable to future builders.

Respectfully yours,
EGBERT HAWLEY.

Derby, Vt. 4th Feb. 1839.

JUDGE BUEL—Dear Sir—I send you the plan of my dwelling-house, with the improvements which several years' occupancy have suggested. In size it is 38 by 30 feet, built of a planked frame, with one tier of brick on the outside. This serves to exclude cold and moisture more effectually than any other material. Cellar as large as house, 7½ feet deep. The conveniences of the inside will be seen from the rough draft annexed.

[Fig. No. 34.]—GROUND PLAN.



No. 1, Kitchen, 14 by 19 feet. No. 2, Entry or passage to No. 5. No. 3, Fire-places and oven. No. 4, Closet. No. 5, Sitting room, 11½ by 15 feet. No. 6, Front entry, 8 feet wide. No. 7, Parlor, 15 by 15 feet, warmed by stove, the pipe passing into chimney resting on beam at *a*, (Fig. No. 35.) No. 8, Bed-room, 8 by 9 feet. No. 9, Cupboard. No. 10, Place for hardware, brooms, &c. at the entrance to the cellar. No. 11, Bed-room, 8 by 9 feet No 12, Cupboard. No. 13, Sink. No. 14, Buttery, 7 by 12 feet, having a cool part of the house, as it is or the north side, the house fronting the east. No. 15, Back kitchen. No. 16, Meal-room. No. 17, Wood shed. No. 18, Walk. No. 19, Shed and barn. No. 20, Waste room for setting away cooking utensils. *Second Story.*—No. 1, Sleeping room, warmed by kitchen stove-pipe. No. 2, Chimney and closet. No. 3, Sleeping room; (Nos. 1 and 3, 14 by 15 feet, with fire-place or stove.) No. 4, Small room, lighted from hall. No. 5, Hall, a large room for spinning and weaving, or for beds; size 15 by 28 feet, or it may be divided by partition. No. 6, Bed-room or closet, lighted from hall; stove in the hall.

Thus I think you will perceive by this arrangement, at least one advantage—that the greatest possible amount of room inside is secured, in proportion to the dimensions of the building. I would also invite the attention of farmers to the materials of which the house is built, as affording for cheapness, strength, and durability, as well as security from the effects of dampness and cold, the best now in use to my knowledge. You will notice this building fronts upon a road running north and south. The road being changed will somewhat affect the position of the rooms.

I suppose the first object to be attained by procuring a model of a farm-house, is in the plan of the lower part or basement story; of course the dimensions may be lessened or increased, and each builder will use his own discretion as to size as well as heighth of his dwelling. My house is one story and a half, so the proportions of the upper rooms are somewhat curtailed by the slope of the roof: this may be remedied by building a little higher, if thought an inconvenience.

The doors are marked in Fig. No. 34, thus (:)—the windows are marked thus (·). Fig. No. 34, presents a ground plan of the house, and Fig. No. 35, the front side and south end. 24 light windows in the basement story, and 20 lights in the upper story.

[Fig. No. 35.]

Of the back kitchen, I have given but a loose description, as its size will of course be determined by the necessities of each proprietor. Very respectfully yours,
WILLIAM VERBACK.

Efficacy of Lime in preventing Insect depredations—Mildew of the Gooseberry.

Mr. BUEL—Sir—Although not a tiller of the soil, I have lately become a subscriber to your valuable paper, and feel a disposition to perform what little may be in my power, to increase the stock of agricultural knowledge, and to stimulate to renewed exertions those who are practically engaged in this all important, though still too much neglected source of national wealth and greatness. In the Cultivator for May, page 57, I observed a communication, which stated among other things, that a piece of corn on ground where fragments of wall, &c. had been strewn for manure, was exempt from the ravages of worms. This recalled to my recollection some facts which were communicated to me in conversation some time ago, by an intelligent old gentleman, who was for many years a farmer in Columbia county, in this state, and which were in substance as follows:—He once applied what he supposed at the time was plaster or gypsum, but which was afterwards ascertained to be lime, to a number of hills of corn, potatoes, cucumbers, melons, &c. It was applied at the time of planting, about a handful being thrown directly over the seeds in each hill, previous to their being covered with earth. He remarked that the corn to which this application had been made, was entirely exempt from worms, while other pieces of corn in the vicinity suffered severely from their depredations. The cucumber and melon vines, &c. were also exempt from their attacks, neither were they troubled by the striped bugs or flies, with which they are generally molested. The gentleman assured me, that he had afterwards repeated this experiment a number of times, and always with a like satisfactory result. It would seem from this, that lime is to a great extent a preventive of the ravages of the grub and other insects, when applied at or previous to the time of planting. The mode practised by my informant, may not answer for all soils and situations, but the same result might probably be attained by throwing the lime mixed with earth over the surface, and ploughing or harrowing it under previous to planting.*

A short time since, at the house of a friend, while overlooking a volume of the Cultivator, (for 1835,) I noticed a communication in which hydraulic or water lime, (some account of which was given in a recent number,) is highly recommended as a paint for fences, out-buildings, &c. The writer asserts that it is more durable and much superior in all respects to common lime. With the exception of stating that he mixed it with skim milk, he gives scarcely any directions respecting the proper manner of applying it. I shall be pleased if some of your correspondents, who have used the water lime for such purposes, will communicate the result of their experience, and if favorable, state the best method of mixing and preparing it, &c.

There are, in my garden, some young gooseberry bushes, which have been well manured and pruned, but the fruit, since they commenced bearing, (about three years ago,) has been uniformly *rusty*, as it is commonly termed. To prevent this, I have tried several remedies without success. Last year, seeing salt dissolved in water somewhere recommended, I had it sprinkled over the bushes several times, commencing when they were in blossom, but without any effect. I have also tried lime, (recommended I believe in the Cultivator.) Last fall, it was applied freely about the roots, and the branches whitewashed as thoroughly as practicable, and a small quantity mixed with water was sprinkled over the bushes two or three times this spring. This experiment answered no better than the other. It would be a source of gratification to me, and doubtless also to many other persons, to be informed of any effectual remedy for this disease, which may be known to you or any of your numerous correspondents. Respectfully yours, E.

New Utrecht, L. I. July 18, 1839.

REMARK.—We have cultivated the gooseberry eighteen years—during sixteen of which, we lost most or all of the crop by mildew or rust—but the last two years the fruit has been fine, clean and healthy. We impute the recent exemption to the application of brine (salt and water,) to the ground about the bushes in the month of February, which we have done two years. We consider the mildew a vegetable parasite, which abides permanently upon the collar and root of the bush, and from which seeds are disseminated, under a suitable state of the atmosphere, in summer, to the fruit; and that the application of salt, when vegetation is dormant, destroys the parasite without hurting the bush. Pickle may be used in the growing season, at the rate of one ounce of salt to one gallon of water. In winter it may be made much stronger. —*Cond.*

Crosses of Vegetables.

Deep River, Ct. 16th July, 1839.

J. BUEL, Esq.—Sir—Will you answer me, in the Cultivator, the following questions, giving either your own opinion, or that of correspondents? I think the English writers and some others are not correct on that subject.

1. What kinds of vegetable, vine or plant, will cross or mix, so as to produce a good or bad kind?
2. Will any that does not produce a kind between the two, injure each other in this way?
3. Are not many of our seeds injured in this way, producing worthless plants among good crops?
4. Will not the potatoe bulb or root, be injured in the blow, crossing without making use of the seed?
5. Will not perennials and annuals sometimes mix together in the blow?
6. Will the cucumber and melon—the muskmelon and watermelon, or the melon and squash, mix so as to inure the seed?
7. Will not all of them in their own kind, mix or cross so as to produce good or bad fruit or roots? Yours truly, PHINEAS PRATT.

ANSWERS.

1 and 2. Vegetables, like animals, will mix and produce

* If lime is a preventive, it must be owing to its caustic quality, and should of course be applied in a fresh burnt state; and it would seem better, as a guard against the cut-worm, to apply it on the surface, after the seed is covered. The soil about the young plant then becomes saturated with the alkali, which must be obnoxious to the grub. We have applied both ashes and lime in this way to our corn, and although the crop sustained no injury from the worm, we cannot exactly say that the lime and ashes saved the corn.—*Cond. Cult*

new varieties, through their seminal organs, or seed vessels, if they are of the same genera, or varieties of the same species; and the progeny, as in animals, will be like the parents, good or bad, better or worse than the female, according to the quality of the male, which impregnates or fecundates the female sexual organ.

3. Many of our field and garden seeds are greatly deteriorated in this way. Hence, among gardeners, no two kinds of cabbage, or of turnip, &c. are allowed to seed near each other, lest they should change the variety desired to be preserved pure; hence florists destroy single and imperfect flowers, lest they should fecundate and spoil the seed for double flowers; and hence, too, our field seeds deteriorate, under careless husbandry, until they become in a manner worthless.

4. The potato will mix, like other plants, through the blossom and ball, but not through the tuber; that is, the seed of the ball will produce new varieties, but the tubers will not.

5. We think perennials and annuals will not mix, though of the same genera.

6. Different species and varieties of the cucumber, melon and squash will mix with some of their own genera, but not with another genera, and not with all of their own; as, for instance, we doubt if the seed of the muskmelon is affected by the contiguous growth of the cucumber, or the seed of the watermelon by the contiguous growth of the squash, though the two first belong to the *cucumis*, and the two latter to the *cucurbita* family. Again—the egg plant, tomato and potato belong to the genera *solanum*, yet we do not think the blossoms of the one affects the seeds of the other.—*Conductor.*

Poudrette Manure.

Mr. J. BUEL—Dear Sir—I purchased last spring, a few bushels of this article, which I applied to corn and potatoes; making experiments of different quantities to the hill, in order to test its strength more fully. The experiments have resulted favorably—one hand full or a gill, being sufficient in the hill to cause either corn or potatoes to vegetate sooner, and outgrow what was planted at the same time on other manure. It has also been tried in this county on wheat, and I am informed that it answers an excellent purpose. I believe it to be *more fertilizing*, and at the same time *cheaper*, than any other manure used in the vicinity of New-York. It may be put up in barrels, and sent to any part of the country.

"*The New-York Urate and Poudrette Company*," by whom it is prepared, is located on the Hackensack river, New-Jersey, having an office in New-York city, where orders are received.

JOHN G. BERGEN.

Brooklyn, Kings co. July 18, 1839.

Underdraining with Pine Gutters.

Southampton, Va. July 8, 1839.

JUDGE BUEL—Sir—I get good information from some of your correspondents; and what little I know about underdraining, your correspondents shall be welcome to, if you think it worth publishing.

About six or seven years ago, I put down an underdrain in the following way:—In the first place, I cut a ditch the width of the spade, deep enough to make the land dry, and was careful to make it well. I then sawed blocks off of logs, about eight inches long, and rived them three or four inches wide and one inch thick, and lay these pieces across the ditch, about five or six feet apart, and settled them level with the bottom of the ditch. I then went to our piney old fields, where we have a plenty of pine poles, and cut those down about eight inches through, and dug them out in gutters; the poles may be from 12 to 18 feet long. After I got a sufficient number of these gutters dug out, I hauled them to the ditch, and commenced at the upper end of the ditch, and laid the first down, the big end of the pole at the upper end of the ditch, and the second pole was to lap on the little end of the first, and so on, until I finished. After all the poles were down, I hauled pine straw or pine brush, and filled the ditch about half full, and then returned the dirt, and the ditch was done forever. Since I put down the first drain, I have put down about 900 yards, and if I live, I intend to put down in the same way, all the ditching I shall make the balance of my life time. The durability depends upon how long the gutters will last; but as the air cannot get to them, I believe they will last 50, or perhaps 100 years. Yours, &c. JESSE LANKFORD.

N. B. The big end of one pole is to lap six or eight inches over the small end of the other.

Bloody Murrain.

JUDGE BUEL—Sir—Under this head I find in your last (July) Cultivator, a piece written by A H. F. Payne, (who appears to be a resident of the state of Missouri,) on his experience of the bloody murrain in cattle. As he appears to be unacquainted with the disease and its preventive, I am induced, from a long experience, to endeavor to throw some light upon that subject, for the benefit of those living in countries subject to that fatal disease, which I believe all new countries are subject to, while their cattle run at large through the summer season.

1. I hold that one ounce of prevention is worth a pound of cure.

2. I have found that wood ashes given in equal parts with salt, at the usual times of giving my cattle salt, for the last twenty years, has been a certain preventive.—This is my remedy—try it, Mr. Payne.

3. The bloody murrain is occasioned by an extended and overflowing gall, affecting the liver, causing the leeches or blood-suckers therein, and the flow of blood outward or inward, and death follows. Many other prescriptions might be given for reducing the gall, but I know of nothing so handy and cheap as to mix ashes with salt. Cattle themselves apply the remedy when they can come at lye made of wood ashes.

4. As the disease prevails more in new countries than old, and vastly more with cattle that run in the woods than with those in enclosed pastures, I infer that the woods herbage induces these extended galls to a ruinous extent. As the gall is some time in accumulating, it will be some time in diminishing; by this course, therefore, no person should trust a few messes in a season, or a cure when the liver is rotten. The working ox, the milch cow, the young and the old, the fat and the lean, I have had and seen die with the murrain, but all had extended galls that I ever examined; and perhaps no country has been more afflicted with this disease than the Western Reserve, in the state of Ohio, of which I have been a resident for thirty-five years, and am a practical farmer, and have not lost a creature with the murrain for the last eighteen or twenty years. Although I have now no occasion to let my cattle run in the woods, I still continue to use ashes with salt, fearing the result of neglect, having formerly lost many cattle.

I am sorry to hear that Mr. Payne is paying $5 per bushel for Baden corn, and that all a cheat. I think in his climate, the good yellow flint and perhaps red cob would do just as well; but he probably thought that when men had been detected in selling wooden pork hams, neatly canvassed, wooden nutmegs, and mullein for tobacco seed, &c. that the rogues had done cheating. Most respectfully yours,

JONATHAN WARNER.

Ashtabula co. Ohio, July 15, 1839.

Hon. J. BUEL—Dear Sir—Judge Warner, the writer of the above article, is a practical farmer, residing in this place, and a man who has had many years experience in horticulture, and I hope you will give his article a place in your valuable paper. Very respectfully, S. M'INTYRE, P. M.

Force of Prejudice—Utility of Premiums.

"Men are fond of certain tenets, upon no other evidence but respect and custom, and think they must maintain them, or all is gone. Though they have never examined the ground they stand on, nor have ever made them out to themselves, or can make them out to others."—*Locke.*

This remark is applicable not to the understanding alone, but to the continual practice of men in their every day pursuits. No occupation is exempt from it, and upon none does this blind servility of the mind exercise a wider or more pernicious influence than upon agriculture.

Farmers generally are proverbial for prejudice, and an obstinate adherence to old fashioned and long tried methods of doing every thing; and nothing but the example of others, making the results of their innovations palpably and undeniably beneficial, will ever effect a change. This disinclination to change, or to adopt "new fangled notions," as they are frequently termed, arises from several causes; foremost of which may be considered the situation of farmers, retired, and beyond the influence of public spirit, and that enterprise and energy of character which impels others to improvement. Secondly, the want of means or capital to risk any deviation from a long tried course, without the certainty of remuneration. And, lastly, ignorance, the foster mother of prejudice and conceit, handed down from one generation to another, nursing itself in its own blind self-sufficiency, and effectually excluding the light which science, reason and philanthropy are struggling to disseminate for the benefit of others.

It is, however, cause of gratification, that the attention of farmers has at length, in some measure, been aroused, and that they are beginning to shake off the apathy that has so long enchained them. For the last three years, in many parts of our land, there has been a steadily increasing, and permanent improvement in the art, which, considering the small amount of light diffused, and the strength of prejudice opposed to it, has scarcely a parallel in the annals of agriculture. It is true, in parts of the old world, the products of the soil have been increased to a most wonderful degree; yet the improvement has been more gradual and limited in its extent; confined to certain districts or counties, where intelligence, united with ample means for experiment, guided the large proprietors in their endeavors to improve their unproductive estates. In this country there has been no stimulus of that kind to arouse the energies or to excite the ambition of the humble cultivators of the soil; content to live from hand to mouth, earning a mere subsistence, our farmers have groped along in the same beaten track, for the last fifty years. But light at last is beginning to dawn upon their benighted faculties. The press—that powerful instrument of good or ill—is insinuating itself into every hamlet and cottage. Rail-roads and steam-boats have raised, as by an enchanter's wand, fertile valleys and pretty villages from the deep seclusion of remote distance, to the admiring eyes of men of taste and science from the city. Intelligence and capital are at work in the country, developing its capabilities, and adding interest and beauty to its natural charms. Science has invaded the territories of ignorance and simplicity, and lo! the change.

Yet the struggle has but commenced; although in many favored parts, the genius of improvement has alighted in her course, still there is a vast extent of territory where the obstinacy of habit, and blind adoration of ancient customs, are still to be combatted and overcome. How this is most readily to be effected, is yet a matter of question; in the great work of reformation and improvement, our agricultural papers are certainly, so far, entitled to the largest share of merit; but their influence has been mostly confined to the upper class of farmers—men of intelligence and property, who expect to realize a certain per centage for their investments; which, failing to obtain in the ordinary methods of cultivation, they seize with avidity upon any thing which promises better; and partial success prompts to further experiment. With these, prudence and a just economy are all that is necessary. Once excite the energies of an intelligent mind—let it be interested in the occupation before it, and its course must be onward. The field of agriculture is the field of science, and the further we advance in it, the brighter and more interesting are the charms unfolded to our view.

It is the poorer, and by far the larger class of farmers, for whom the sympathies of the more enlightened should be enlisted. Their improvement offers a wide field to the philanthropist and patriot also; for as they excel in numbers, so also must their efforts affect the general prosperity of our common country. But their numbers exclude the possibility of individual exertions in their behalf. By furnishing them with cheap publications, or giving them access to works of science which they can comprehend, we may certainly benefit a few, but the great mass must be operated upon in a different manner; with them, the value of any instruction cannot be appreciated, unless its connection with material improvement be distinctly shown. They must be spoken to in the language of dollars and cents, and this can only be afforded by legislative bounty, in the shape of premiums, for excelling in the different branches of their business. Tell a man who has been accustomed to get his stock through the winter, by feeding them the refuse and unmarketable forage from his hay or grain crops, that it would be better to devote time and labor to the cultivation of roots for the same purpose, and he cannot comprehend you; nor will he, so long as he does not clearly see the advantage; but urge him to the attempt by offering a sufficient inducement, in the shape of a premium for any particular crop, and when it is once grown, it must be either fed or sold. In either case it acts beneficially; for it must be obvious to the dullest mind, that what will remunerate the purchaser, certainly must the producer, if consumed in the like manner.

The same argument holds good with stock, and all the various products of the farm. Offer sufficient inducement to raise none but the best, and the poor will speedily disappear. And why should it not be so?—Can our legislators, who have frowned down every effort to extract but a pittance for this noble purpose, offer one plausible reason for withholding it? Can they be so wilfully blind as to refuse to see its benefits, or so wanting in patriotism as to deny but a small amount for a public good, when they unhesitatingly lavish thousands for the enrichment of the few, who openly speculate upon the property of that public? If so, then upon them should be cast the reproach which now attaches itself to the low state of agriculture in our country.—And let those who now feel the reproach, manifest their indignation in the proper place, and when the proper time arrives.

Our farmers are justly termed the bone and sinew of our country. It is high time for them to show the strength of the material they are made of. Let their voices speak from the ballot box—let them discard all party distinctions, and look only to the integrity and honesty of their candidate, and let him be one who has shown, by his exertions in their behalf, that he has his country's good at heart. L.

New-York, July, 1839.

Experiments with Poudrette.

Narrows, L. I. July 23, 1839.

Mr. BUEL—Having procured a few bushels of poudrette from the New-York Urate and Poudrette company, who are extensively engaged in its manufacture, for the purpose of making experiments to test its efficacy, I will give the results as far as present appearances indicate, for insertion in your valuable journal, if you deem them worthy of a notice.

A compost was made by mixing the article in question with city-stable and hog manure, in such proportions as to make the cost of a bushel of the mixture double that of the same volume of the stable and hog manure. This compost was used for cucumbers, melons and corn; putting the usual quantity in the hills in some rows, and in others less: in the growth of the vines of the two first and yield of the cucumbers, I find nothing to warrant a belief of sufficient advantage to compensate for the extra expense; but the corn, when it came up, was of a darker green, grew more rapidly, and still holds the ascendency over the adjoining rows, which were manured in the usual manner. Two rows of corn adjoining the others were also manured with half a pint, and two rows with a pint in a hill of the poudrette alone, covering it with soil previous to dropping the seed; for I find by experience that corn does not prosper when planted in contact with hot fermenting manure: in the growth of these rows there is but little difference; those containing the largest quantity excelling; but they all flourish more than any others in the field, and are also superior to those in which the compost was used. A pint of poudrette mixed with the soil in each hill, was applied to two rows of cucumbers; these appear to grow and yield about as well as the adjoining rows, in which the ordinary manure was used.

Also planted in May on clover sod, in rows, a small piece of Mercer and kidney potatoes with good stable manure, a large shovel full on four potatoes; each tuber being 15 inches apart, excepting a row of each kind in which a half pint of poudrette alone was dropped on each potato: those last vegetated sooner, and the vines are stouter and more thrifty than the others.

From all appearances, the yield of the corn and potatoes on which poudrette alone has been used, will exceed the others; but the final result I intend accurately to ascertain and communicate to you when the crops are gathered in the fall.

My object in writing this communication, is to draw the attention of agriculturists to this kind of manure; which, without doubt, when properly applied, will prove as in France, China, and other countries, a valuable auxiliary to the farmer; and I hope that those who are better qualified many be induced to take the matter in hand and enlighten the public, so that the most judicious modes of application for the different crops and varieties of soil may become known. The conversion of a substance into a valuable manure, which in large cities for ages has been consigned to the river or otherwise dissipated and lost, and which increases the productions of the soil, and assists in making our land teem with plenty, must prove beneficial, not only to farmers, but to the whole community. Especially to the farmers in the vicinity of New-York will it prove to be of great benefit; for they possess not the unexhausted soil of the west to operate upon; they are compelled to fertilize their land or starve; to pay thousands of dollars for the sweepings of the streets and emptyings of the stables, of which in consequence of the increased demand and facilities of transportation, it is difficult even to obtain a sufficiency, although the price has nearly doubled in the last 20 years.

There may be some failures in the experiments made with this kind of manure, before the most judicious modes of application are ascertained; yet its final triumph and ultimate success may with safety be predicted. Yours, TUNIS G. BERGEN.

The above communication was submitted to Mr. Peter Barthelemy, who is one of the discoverers of the process of making urate and poudrette, and who is the only introducer of the article in the United States, and who joined the present company for the purpose of manufacturing urate, has made the following remarks:

"It will not answer to make a compost of poudrette with any other *manure*. It must be applied to the earth or soil as delivered from the factory: because the poudrette will act immediately upon the compost added to it instead of the vegetable matter in the soil; and the consequence is, its effect upon vegetation will be retarded, as long time as it will require to have the other part of the compost absorbed, and the additional compost will be lost to the vegetation; the poudrette being of a stronger nature will first absorb any other manure before fertilizing the crop; in other words, poudrette alone is worth more than all the additional compost manure added to it. P. BARTHELEMY."

The Wheat Fly

Is an animal that has never attacked my grain. It has so happened that my neighbor's wheat and mine were in adjoining fields, separated only by a fence; that his wheat was nearly destroyed by the fly, and not one discovered in mine. The only solution I can give to it is as follows:

My wheat *is uniformly* sowed late, never until there has been a hard frost,—sufficiently so as to kill insects of that kind. I cause a strong solution of salt and water to be made, sufficiently so to bear an egg; and my wheat is soaked about 24 hours in it, and then rolled in lime on the barn floor. When that rule has been followed, my crops have been about as good as my neighbors, when their wheat *was not affected* with the fly.* Great care should be taken not to soak the wheat more than about 24 hours, and then rolled in lime; else the germinating quality of the wheat may be destroyed or injured. A. DEY.

New-York, 23 *July*, 1839.

* Our correspondent alludes to the *Hessian fly*, not to the *grain worm*; as the latter attacks the ear, and against which late autumn sowing would be no preventive; but rather aid in the work of destruction. The grain in the early sown might be too hard before the fly appeared; but that sown late comes into head in the nick of time for the deposites of the fly.—*Cond.*

How to increase the circulation of Agricultural Papers—Subscribers' Duties.

Lake C. H. Ia. July 18, 1839.

My Friend—This is to you—I see you about to pass over and not read this article—you don't like the title! It an't interesting to you, do you say? Look again—look at the signature,—did you ever see my name to an article in this paper that did not interest you? There now, you see I am an old acquaintance. No. Well, then you did not take the last volume of the Cultivator. The more's the pity. Thousands who read that, will remember me right well. They will expect something interesting as soon as they see this article is from their old friend. I beg of them, as well as of the publisher, a thousand pardons that I have neglected them so long. My conscience has not been easy for months. I knew I had not done my duty. For when a man, particularly a friend to agricultural improvement, knows that he has a talent to be useful and interesting in his writing; that by a little light labor of his pen, that he can lighten the labor of his fellow laborers, he *neglects his duty* if he neglects to do it. You need not call me an egotist, because I say that I know I have that faculty. Thousands have told me so; and I now here tell you that I have neglected my duty. Reader, have you neglected yours? did you write a letter to your paper, and because it was not published, say you would never write another? Did you say further, that you would never subscribe for the paper again? Shame on you then,—Oh! you was only angry a few minutes,—you're over it now, and think yours the best paper in the world. You think you made an hundred dollars more off of your farm last year in consequence of taking it. So do I. I'll tell you another thing that I think. I think that the readers of the Albany Cultivator alone, made $50,000 more in their various occupations last year in consequence of reading it; and equally so of the New-England Farmer,—The Genesee Farmer,—the Franklin Farmer,—the American Farmer, and so on of every good farmer's paper, in just proportion. There is another thing I think; that the increased value of those readers' farms is twenty times the above sum. There is another thing I think; think, why, I know it. I know it by my own feelings. I know that the increased happiness of those readers was worth twenty times more than all the increase of property. Suppose then that the circulation was doubled,—yes, but don't every body subscribe that wants to, now? No, not half. But you can get them to—and it is *your duty* to do it; you an't able to pay for any papers to give any. Who asked you to do it? There is your neighbor Jones that always is reading yours when he can get a chance, and who never has a dollar that he thinks he can spare to pay the subscription; would be glad to take the paper and pay you in chopping wood. Now do you think you did your duty last year? you know you had a two dollar bill, and it cost you some trouble to get it changed when you sent for yours; you might just as well have sent for two copies and let Jones have had one. He would'nt have lost them two fine old sheep if he had read the Cultivator; because he would have seen that ruta bagas were just what they wanted. But poor man; did'nt know it. There is your neighbor Williams too; you had some dealings with him, and he would have been glad to have taken the paper from you, "in the way of trade;" "because that would not be paying out money," though you paid it to him. Now you know that he lost nearly all his first planting of corn by the insects, birds, &c.; and then came up to your house to "get the receipt out of the paper how to doctor the seed." But then it was too late to replant; so he planted beans. Did you ever see a finer crop? Got nicely ripe and pulled and hung up on the scattering corn, lugged out to the fence, and stone heaps, &c. to put up to dry. Well, there came on a long warm rain; and poor man, he lost the whole of them nearly, more than an hundred bushels. Do you remember when he came to your barn, and the conversation? "Did'nt you lose your beans, neighbor Thomas, that warm rain?" says he in perfect astonishment, "I saw you pulling them the same day I did,—and mine were the ripest. Why bless me, how bright they do thrash out. Now in God's name, do tell me how you saved them?"

"Why, I read it in the Cultivator more than a year ago"

"Good heavens, 'twould have been worth more than an hundred dollars to me."

"So it was to me—and then it's so easy and simple; take a parcel of stakes,—I took old bean poles out of the garden,—out into the field and stick 'em round, and put a few stones or sticks at the bottom, and then pull the beans: no matter how green they are, and stack them up with the roots touching the stalks until you get high enough; and then tie the top course with a little straw or a string, and the trouble is all over; they will cure as well as a shock of corn, and injure less."

"Well now, I have always intended to take that paper,—but I never had a dollar to spare at the right time to send for it." Now my friend, do you think you did your duty? If you had, would you not have sent for a paper for each of these neighbors, and in a manner compelled them to take them?

I got five and twenty into circulation "in the way of trade;" can't you? don't be mistaken,—I mean you.—Can't you get one; just one more subscriber; it is *your duty*. Nothing can sustain this government but an improvement in her agricultural branches. I don't know how many hundred millions of dollars we are in debt. We? Yes, we. You and I, and every *producer* in the government. On that debt annual interest must be paid. Must be paid by a tax on agriculture. Let it be mystified as much as it may, 'tis the only way whereby under heaven that it can be paid. 'Tis the farmer that pays for every rail-road and canal, whether useful or not; and when farmers are so much in debt, it is time they were improving the means to get out. How can they improve without they gain knowledge? How can they gain knowledge unless they read? How can they read unless they are provided with papers or books. How can some of your neighbors provide themselves, unless you assist them? Then for once attend to this solemn duty. Don't let your conscience rest one day, until you have procured one more subscriber to this paper. And if you can't procure a subscriber, send yourself and procure another set, (20 if you are able,) and distribute them among your neighbors; you will soon see the leaven work; the corn will come up, the beans will be saved, and you will rejoice at the end of the year, as you think to yourself, "how much good I have done with so small a sum." And here I make you a proposition. At the end of the year if you are dissatisfied that you have followed my advice, write to the publisher and your money shall be refunded to you. He will endorse this proposition for me I guess.

And this reminds me, the last of my "extra" numbers is used up "in the way of trade;" add another to my list, I must keep one on hand; 'tis *my duty;* 'tis the way I make up my list of subscribers—and it is certainly a large list for a place so new, where all are poor and new beginners in life.

But the effects are visible. There are no "Nick Bradshaw's" in this settlement.

There are some other duties that "we owe one another," but my letter is already too long. I shall write again. In the mean time think of the *duties* here pointed out. Can you deny them to be truly stated? Then instead of thinking, be up and doing; and truly you shall meet your reward. Most truly your agricultural friend, SOLON ROBINSON.

Holbrook's Revolving Horse Rake.

Whitesboro, July 20, 1839.

Jesse Buel Esq.—Dear Sir—I have used the revolving rake of Holbrook & Co. on my meadows for six or seven years past; and am confident that a man and horse can rake more than ten men with the common rake.

Mr. Holbrook's rake is superior to any I have seen; and I confidently recommend it as better than any horse rake now in use. Respectfully your friend and obedient servant, S. NEWTON DEXTER.

Remark.—We have received, but have not yet been able to use, one of Mr. Holbrook's rakes. Our grass is generally too heavy for a horse rake—two rakings by hand serving for a tolerable winrow; and our habit of making our hay in grass cocks superseding spreading the hay. They are for sale at W. Thorburn's, Albany.—*Cond.*

Principles the bases of correct Practice—A Proposition.

Stockport, 7th mo. 1st. 1839.

Respected Friend J. Buel—I have long been a reader of the Cultivator, and have derived from its pages a great deal of pleasure and a great deal of substantial benefit. I commenced farming without any previous acquaintance with the business; hence the large body of sound practical information contained in it, has been peculiarly valuable to me. I have, however, regretted that so many of the dicta advanced by thy correspondents are based on the narrow foundation of a single experiment.

It is unfortunate for the progress of the *science* of agriculture, that this habit of theorising on the basis of a single experiment has become so inveterate with our rural population; it seems to me that among other evils resulting from it, is the strong distaste for *book farming* which is manifested by so many farmers.

They find in one treatise, that the phases of the moon should be strictly attended to in all agricultural operations, because he has tried the experiment and found it to be so. Another author advises us to plough and sow whenever we are ready, without the slightest regard to lunar influence. He has tried the experiment and found that the moon had neither part nor lot in the matter.

This controversy respecting lunar influence, is very far from standing alone as an example of the contrariety of opinion existing among our most enlightened agriculturists; indeed, there is scarcely any single practice recommended by our agricultural writers but what a diametrically opposite practice is strongly enforced by another, and both appeal to *experiment* to support their respective opinions. The unsophisticated farmer, puzzled, and perhaps led astray by these conflicting opinions, imbibes the idea that experiments are very fallible things; and that book farming is only fit for those who have plenty of money to *lose:* hence, he either goes on in the old track of his fathers, or finding that guessing is far easier than experimenting, and that it leads to results quite as definite, forms a theory of his own, and does well or ill, according as it approximates to truth or error. Now in experiments conducted by those who know how to interrogate nature, there is none of this ambiguity; the results are as certain, and the general laws deducible from them, stand on as firm a foundation as any of the propositions of Euclid; those who have traced the masterly investigation of the nature of caloric by Dr. Black, which resulted in the discovery of latent heat,—or that of the properties of oxygen by Lavosier, which resulted in establishing the theory of combustion, will have no difficulty in asserting that the same skill and patience which were exhibited by these illustrious masters of the Baconian or inductive system of philosophy, be applied to the solution of any of the vexed questions in agriculture, the result would be equally satisfactory; and let me remark in passing, that I know of no way in which thou couldst employ thy gifted pen more profitably, than in giving a plain and simple abstract of the fundamental principles of Lord Bacon's celebrated system of inductive philosophy.

It is a disputed question amongst farmers, whether plaister ever benefits clay land,—as usual, there are plenty of experiments on both sides. I have frequently sown it on clays without the smallest perceptible benefit; but this spring, I was told to sow it at the time of full moon in April. I did so; and there is nearly twice as much grass as there was last year. This of course is conclusive that clay lands are *sometimes* benefitted by plaister; but it affords very little light on the far more important question, (under what circumstances is it beneficial to clay lands?) because I did not pay attention to any of the collateral circumstances.

I would here remark for the sake of precision, that the clay on which the experiment was tried was of a stiff, adhesive character; containing very little, if any, silicious matter. It containsa bout 90 per cent of alumina and 10 of vegetable and earthy matter. Now is the success of my experiment owing to my sowing at the time of full moon in April, or to the fact that it was sown early in the season, or to the wetness or dryness of the season immediately following, or to the absence of snow last winter. In order to test the question thoroughly, let eight individuals of leisure, and of moderate acquaintance with science, (one in each senate district) provide themselves with a thermometer and barometer and rain gauge. Let them also provide themselves with a book ruled for the purpose, and commencing on the first day of January next, note in it at 8 A. M., 1 P. M. and 8 P. M.; the state of the thermometer, barometer, and the direction of the wind and the state of the sky with reference to clearness and cloudiness; let the figure 0 represent entire clearness, and 10 entire cloudiness; if the sky is half covered with clouds and half clear, let it be represented by 5, &c.; and let them each day add a note respecting the general appearance of the weather, or any thing in nature affected by the weather. Whenever it rains, let them carefully note the number of inches and parts of an inch that has fallen; when it snows, let them be careful to select a level piece of ground sheltered from the wind, and measure its depth as soon after it has fallen as possible. As soon as the frost is off the ground, let a number of spaces, each one rod square, be marked off contiguous to each other; then as soon as the snow is off, let one rod square be sowed with one gill of plaister, and the square rod next to it which we will call No. 2, be left without any. At the time of new moon in April, let No. 3 be sown with one gill of plaister, and leave No. 4 without any. At the full moon sow No. 5, and leave No. 6; and so on, at the time of new and full moon in May and June; then let the grass on all the ground be cut in one day, and let the weight of each square be separately noted.

Care should be taken to weigh the hay on all the squares as nearly at the same time as possible, so that one may not be dried more than another; and that the quantity of plaister sown be accurately measured. Indeed, perfect accuracy in all the different steps which I have detailed is all-important. I should like to point out the points which I expect would be settled by the experiments, but my paper is already full, and I must close by saying that for the sake of uniformity, each experimenter should select stiff clay,—not black muck, nor heavy loam; but *clay*. Respectfully thy friend,

N. N. D.

REMARK.

A compliment of a bound volume of the Cultivator will be made to any gentleman in each or either of the eight districts, who will carry out the suggestion of our correspondent and send us the result.—*Cond.*

A Bird Story.

Milton, Ulster co. N. Y. July, 1839.

FRIEND BUEL—I would not have ventured to forward the following statement, were it not that the narrator of it, Edward Hallock, of the firm of Wm. Hallock & Brother, of Milton, Ulster co. is known to thee, and known to be of unquestionable veracity. I have heard him before express his conviction, that if birds were protected and cherished by farmers and others, we should never be subjected to the loss of corn or other crops by grubs; and that other noxious insects would be sensibly diminished. There is a small kind of bird (the males nearly black, the females brown,) that is noted for being around and following cattle in the field, as in the case I am about to detail. Mr. H. says, "on the 26th of the present month, I was ploughing for turnips, myself with one team and my son with another; and observing that we were followed by a flock of the above little birds, I took it into my head to notice their motives, to ascertain what was the attraction, when I perceived that their object was grubs. We ploughed up plenty of a small white and a large brown or grey grub, as well as some in a chrysalis state, and angle worms; all of them, *excepting angle worms*, appeared to be acceptable to them; and as the sequel will show, they were capable of devouring large quantities. I should think that one would make way with at least 100 per day. I cautioned my son against making any motion towards noticing them, in any way to intimidate them; as I found they grew more and more bold in their honest avocation, and as the land diminished in width, they would remain in the opposite furrow when not more than three or four feet distant. At length my son spoke cautiously, and said there was one on his plough beam. I then stopped the teams and told the boy to pick up a grub and show it to the bird that had distinguished itself by its tameness. He did so; and the bird immediately seized it. Encouraged by this, I told him to pick up the next white one, and hold it out in his fingers near the ground, crawling down, he did so, and the bird came and picked it out of his fingers! Afterwards he stood up and held out one, and the bird lighted on his hand and picked out the worm. This was repeated until it lighted on my own hand; I raised it up and applied my cheek to its wing without frightening it away. The next day he was not slow in finding us, and practised the same familiarity, in presence of James Sherman, William Hallock and others of the neighbors; it came into the cornfield where the boys were weeding corn, and actually, without any special attraction, perched upon the head of one of the boys; it continued these visits until one of the boys in an adjoining field, could not repress his inclination to seize and hold it. This made him more wary, but he gradually recovered his confidence." I communicate these facts in the hope they may contribute to produce an examination into the subject of how far it would tend to the agricultural interests, to fall upon some method to tame and familiarize small birds, instead of frightening, maiming or destroying them.

Please to concoct something from the above; and from the fact of turkey buzzards being domesticated in Charleston and the southern cities for scavengers—also, that in some province of Germany a premium was offered for the extirpation of a kind of bird, and afterwards doubled to have them back again, on account of the insects destroying their wheat.

E. HULL.

EXTRACTS.

Of the Nature and Action of Manures.

CONCLUDED.

[*From Chaptal's Chemistry applied to Agriculture.*]

Besides the characteristic of providing plants with food, the various kinds of dung possess other qualities, which add to their fertilizing powers. Dung as it is applied to the ground, is never so much decomposed as to have ceased fermenting; and from the moment it is mixed with the soil it produces in it a degree of warmth favorable to vegetation, and serving to guard the young plants against the effects of those sudden returns of cold in the atmospheric temperature, which are so often experienced. On account of the viscous fluids which it contains, dung is not easily dried, unless it be in contact with the air. It therefore preserves the roots of the plants in a state of moisture; and supports vegetation at those periods, when without it, plants would perish from drought. It likewise contains many salts which are transmitted by water to plants, serving to animate and excite their functions. The various kinds of dung, mixed with earth, may be considered in the light of amendments to the soil; and in this view they ought to vary according to the nature of the earth to be improved. Compact soils require to be separted and warmed; they require, then, those manures which have been but slightly fermented, and that are the richest in salts.—Calcareous and light earths require oily manures, which decompose slowly, and can retain water for a long time, to furnish it to the wants of plants in the seasons of drought.

It is by separating these principles, that we may be able to appropriate the various kinds of manure to each species of soil and plant; the attention of agriculturists is already directed, upon this point, to the composition of mixtures of manures, called composts. These are formed by arranging, one above another, beds of different kinds of manure, taking care to correct the faults of one by the properties of another, in such a manner as to produce a mixture suited to the soil to be enriched by it.

For example, if it be required to form a compost for a clayey and compact soil; the first bed must be made of plaster, gravel, or mortar rubbish; the second, of the litter and excrements of horses, or sheep; the third of the sweepings of yards, paths, and barns, of lean marl, dry and calcareous; of mud deposited by rivers, of the fecal matter collected upon the farm, the remains of hay, straw, etc. and this in its turn must be covered with a laying of the same materials as the first. Fermentation will take place first in the beds of dung, and the liquor flowing from these will mingle with the materials of the other layers; when the mass exhibits the signs which I have pointed out, as indicating decomposition to be sufficiently advanced, it must be carried into the fields, care being first taken to mix well the substances composing the different layers.

If the compost be designed to manure a light, porous, and calcareous soil, it must be formed of materials of a very different character. In this case it is necessary that argillaceous principles should prevail; the substances must be compact, the dung of the least heating kind, and the fermentation continued, till the materials form a yielding and glutinous paste; the earths must be clayey, half baked, and pounded, or consisting of fat and argillaceous marl, and mud from the sea coast. Of these all the layers must be formed.

By following these principles in my operations, I have completely changed the nature of an ungrateful soil in the neighborhood of one of my manufactories. Over this soil, composed of calcareous earth and light sand, I spread, during several years, some calcined clayey earth; and this land, upon which I could formerly raise only stone fruit, has become adapted to fruit containing kernels; and produces excellent wheat, whereas before it bore only scanty crops of oats and rye.

Observations and researches in Agriculture:

BEING A FARMER'S LEGACY TO HIS SON.

[*From the Farmers' Monthly Visitor.*]

Prefatory Remarks.—The observations which we intend to make under this head are selected from a series of notes and hints which were noted down at the time of their occurrence, as likely to be of use to one of my family. I felt as if I were bound to make my son some wiser, some better informed for my having trod the path of life before him. I felt as if I should not comply with my conviction of duty if I did not endeavor to make the world, or at least my own family, some better for my having lived and thought before them. In accordance with this conviction of duty, I made, as leisure permitted, such memoranda as I thought may prove useful to those of my own family, especially, and perhaps to others through them; and from those of them which bear the nearest relation to agricultural pursuits, I have selected what follows. Perhaps they may prove to some young beginners in husbandry and rural economy what they were intended to be to him for whose use and reference they were principally recorded—a starting-post from the goal arrived at by a predecessor in the course.

1. *Ruta Baga:—advantages of this crop.*

You may sometimes be placed in circumstances like the following, in which you would hardly know what to do, were it not that the season for sowing ruta baga gives you some elbow-room. For instance; you may not be able to get out all your manure in season for your corn and potatoe crops, as a farmer's work in May generally comes thicker and faster than a month later.—Rather than summer your manure, or get it out at a great disadvantage at the season of corn-planting, plan your work so as to have a spot for Swedes to which you can apply your manure when you have more leisure to get it out.

When your wheat is winter-killed, or otherwise so injured as not to be worth harvesting, or when other crops fail, it is of advantage to have such a resource as the culture of ruta baga presents. You may cut your first crop of clover, if you cannot spare it as manure, and have your land ready early enough for this root crop.

Another advantage of this crop is the facility of harvesting it. A man can harvest fully twenty bushels of turnips for one of potatoes.

The chief advantage of this crop consists, at the present time, at least, in the much greater nett profit which may be produced from an acre in this than in almost any other crop. An average crop is six hundred bushels; but more than double this quantity is, on good authority, said to have been obtained. The expense of cultivation has been estimated as low as two cents a bushel; and I have never heard of judicious management being reckoned higher than four cents a bushel. As food for hogs, cattle, and even horses, three bushels of ruta baga are generally accounted of equal value with one of corn or two of oats. If you will be at the trouble of making the calculations of profit which these data furnish you, you will be astonished at the results. Take the average crop of hay at two tons to the acre, and the average crop of ruta bagas as above stated, and estimating three tons of turnips equal, for neat cattle, to one ton of hay, and you will arrive at a result almost equally surprising.

As a minor advantage I may mention, that on farms like mine which have not the advantage of a running stream where cattle can water themselves, and where we are obliged to break the ice or draw for them every time they drink—it is in such cases good for the comfort and well being of the cattle, and lessens our labor, that less water is needed when cattle are fed on this or other root crops. It is no small trouble to water cattle as they ought to be upon some farms in winter.

This crop possess other recommendations; these I shall not submit to you at present.

2. *Ruta baga.—Time of sowing, and quantity of seed.*

In latitude approaching to 42 and 43 deg. ruta bagas may be sown from the 10th of June to the 10th of July. I have always aimed at getting them in by the last week of June.

As to the quantity of seed, I am now well convinced, that it is much more profitable to sow more seed than is really needed than to be more sparing of seed, and be obliged to transplant. The time occupied in this operation will cost more than the extra seed saved. If you use only half a pound to an acre, you will have a good deal of transplanting to do; whereas if you put on four pounds to the acre you will have a great many to hoe or thin out, but with *regular* sowing, no transplanting.—Transplanted roots never do well. From eight inches to one foot should intervene between the plants.

3. *Soap.—A hint in housewifery.*

In summer and autumn your soap-grease is apt to accumulate beyond your immediate wants; if put away it is apt to be devoured by maggots, and if made into soap, you may not have pine or other appropiate vessels enough to hold it. Having suffered loss from being placed in such circumstances, we were much gratified with a piece of intelligence accidentally received, which relieved us from the disagreeable dilemma. By the boiling your soft soap with salt, about a quart of the latter to three gallons of the former, you can separate lye and water enough to make the soap hard. After boiling half an hour, turn it out into a tub to cool. Cut the cake which swims on the top into pieces, and having scraped off froth and other impurities, melt again, (without the lye and water underneath of course,) and pour into a box to cool. You may then cut it up into bars of proper dimensions for drying. By adding a proportion of resin, well pulverized, at the last boiling, you will have yellow soap like that made for market.

Families moving to the 'Far West' or otherwise, would find it more advantageous to make their soap fit for carriage in this way, than to give it away, or sell it for next to nothing.

4. *Starch from frozen potatoes.*

By accident or carelessness we once had a few potatoes left in the field so as to be injured by an unexpected frost. As we had not our supply of starch for the season yet prepared, it was thought best to take these potatoes, *before they thawed*, and obtain what starch we could from them. They did not yield so much as sound ones—perhaps a half.

5. *Causes of seeds not germinating.*

We have known, and heard of considerable loss and disappointment from seeds, particularly onion seeds, not growing. We have thought and inquired in reference to the cause, and the result of our cogitations and inquiries may be thus stated.

Without a certain degree of moisture, seeds will not germinate. On dry sandy soils, and in a dry season, it seems highly probably, then, that seeds may be deprived of the requisite degree of moisture: perhaps receiving just as much as will mould them and destroy their vitality, or being so near the surface as to be injured by the sun's heat and light.

But the seeds may have germinated, and have commenced to send out their roots and stem stalks and yet be destroyed. If the soil is not pressed closely to the seeds, and very dry weather occurs just at this period of the process of germination, the root being too distant from the soil, and too feeble to draw any supply of moisture, the liquid food of the plant contained in the fermented seed may be dried up, and the life thus destroyed.

If you would avoid disappointment and loss from seeds failing to grow, the preventive process is indicated by a knowledge of the causes most frequently productive of this result, which we think are those stated above. If you sprout your seeds before putting them into the ground you will preserve them from the first cause of failure, but if you pulverize your soil thoroughly and press it in this state with hoe, spade, or roller, upon the seeds thus sprouted, the root stem will soon and surely derive sufficient moisture from the soil.

In a few instances I have found my neighbors blaming the seed as useless, particularly of onions, carrots and parsnips, when I have obtained a little of the same seed, and found it to sprout quite well. You may easily save yourself from such reflections, or from the temptation to blame others, by steeping the suspected seed in warm or tepid water from six to twenty-fours hours, according to the size and hardness of the seed, and then setting it away in a warmish place for a day or two. If good it will sprout in this time; if kept warm in a darkish place, and it does not sprout in this time, the seed is faulty.

In connexion with this subject, I may state that several circumstances incline me to the belief that corn which has been sprouted—no matter in what steep—is safe from the ravages of the red or wire-worm. It has been fashionable to steep in a strong solution of copperas, and to ascribe the safety of the seed in this state, not to the change which fermentation has produced in the germ or chit which is usually first attacked, but to the change in the taste from the copperas. We have known corn soaked in simple water—in water alone—to escape from the attacks of the worm as well as that soaked in a copperas steep. Until this matter is made more certain, however, I would hold it bad husbandry to neglect the copperas, as in addition to the change produced by heat and moisture, we have also the disagreeable taste communicated by this salt.

6. *Stirring the earth a relief against drought,*

Is the title of a very excellent article published by the Hon. John Lowell, in the Massachusetts Agricultural Respository, from which you will find an extract in the text-book I first put into your hands—Fessenden's Complete Farmer. In a very dry season, such as we had in 1838, he had some early potatoes in a very sandy soil which seemed so feeble that they were on the point of withering daily. All hopes of a crop were abandoned; and therefore he though them the subject of what he then supposed a *desperate* experiment. He ploughed them thoroughly, and in three days, without a drop of rain, they were observed to have changed color, and to have started up afresh as if they had received the benefit of ample showers. A recollection of this experiment led us in the dry summer of '38, to compensate to our hoed crops for the want of showers, by keeping the earth well stirred and pulverized around them; and we are confident that our operations in this way were beneficial.

This need no longer be considered a *desperate* experiment, for science enables us to explain in what manner the benefit is produced, and might have indicated it as a proper course even before it had been tested by trial. In a time of drought take a piece of earth and pulverize the surface of one half of it, allowing the other half to remain in its hardened and baked condition. For several mornings afterwards observe upon which of these pieces the dew seems to remain the longest, or to have been imbibed the most. The piece which has been stirred will so evidently be seen to be the moistest, that no doubt can be entertained of your having gained some moisture for the soil in this way. Now it is universally or very generally admitted that the dews abound in the food of plants, and this being so, by stirring the soil around plants you furnish this nutriment to the roots by making the soil light and porous which conveys moisture more readily than a hard, baked soil. The air also is supposed to contain the food of plants in a gaseous or very readily-appropriated state. If this is so, and we have no reason to doubt, then it is easy to see that a light and porous soil is more permeable to the air and to whatever food it contains than a hardened soil can be. This consideration shows that stirring the earth may be beneficial not only in seasons of drought, but also at all times. And in confirmation of this, we recollect that it has been recorded of Curwen, an English agriculturist, that by continually stirring the soil around some field cabbages, he obtained them of the enormous weight of 50 lbs.

Mr. Lowell suggests another mode by which plants may be benefitted in a dry season, by stirring the surface, and keeping the soil light and porous. It is well known that porous bodies are bad conductors of heat. If you take a piece of woollen cloth or a little wool, and a piece of slate or metal, and place them upon a piece of lard or butter exposed to the rays of the sun, you will in a few minutes be convinced of the difference there is, as conductors of heat, between porous and compact bodies. Now it is reasonable to infer from our knowledge of this law, that earth in a hard and compact state must convey heat much deeper than soil that is loose and porous. And it is stated in confirmation of this, that compact earth will become very hot, while a light garden loam well stirred, will remain cool, at two inches under the surface, at noon of a sunshine day. Stirring the earth, therefore, not only allows more moisture and more food to be imbibed from the air and dews of night, but it also enables it to resist the heat of the sun's rays.

7. *How to make agricultural pursuits pleasant as well as profitable.*

For ages the employment of the husbandman has been looked upon as dull, uninteresting work. It has been thought to be a dull, plodding occupation of the hands and not of the head. And there has been too much foundation for such an impression. The agriculturists of years not long by-gone, did little with the head to dignify or enliven the work of the hands. A change for the better seems now near at hand. Perhaps in your day, farmers may be generally more intellectual, more intelligent, and more able to bring the truths of science to benefit them in their manual labors, and to give them interest and delight in their occupations. But whatever others do, I hope you at least will take such measures as will convince yourself, if not others, that agricultural employments are as interesting, intellectual, and pleasing pursuits as any with which they may be put in comparison. I know of no method by which you can more effectually render them so than by employing your mind upon your work. Most assuredly the more your mind is employed upon your work—in tracing effects to their causes, in accounting for failure and disappointment in understanding the operations of nature, in devising improvements, &c.—the more interest you will take in your employments and the pleasure and gratification you will derive from them. Moreover this is not only the way to make your pursuits pleasant, but it is the way to make them profitable also. Your mental operations must be wrong-sided and injudicious indeed if they do not lead you to the discovery of means whereby you can educe more produce out of any certain amount of labor and expenditure. The most intelligent farmers, you may easily convince yourself, if industry is not wanting, generally succeed in making their farms the most profitable. But what I wish especially to inculcate upon you, at this time, is, that you will feel more interest, more pleasure, more conscious dignity in your pursuits, the more you occupy your mind on the subject.

Agricultural schools would aid in thus elevating agriculture.

8. *The Horse—its management.*

Of gross and direct cruelty to your animals, I have no fears of your being guilty; but there are other cruelties which may pass under the milder name of neglect, against which I would warn you earnestly. For that man stands low in my estimation, who is careless of the comfort of his cattle, and especially of his companion and servant—the horse. I trust you will adopt the rule which I have endeavored to follow, as your maxim: I will treat my horse as I think I would like to be treated were I in his place! Allow me to drop you a few hints which may contribute to your accomplishment of this benevolent purpose.

When you purchase a horse, endeavor to find out how and upon what he has been kept—how he has been fed and otherwise managed. This it is important to ascertain, for you cannot make any *sudden* changes in the mode of management without discomfort to the animal, and the risk of injury. If a horse has been grained higher than you mean to, you must reduce the quantity of grain very gradually, and not, by any means, all at once. Again, when you take your horses from grass in the autumn, they should not have a totally dry diet all at once, but should be gradually accustomed to it by giving them roots and mashes with their hay. Begin likewise with a small quantity of oats, and gradually increase the quantity until you arrive at their wonted or intended allowance.

Feed your animals, your horses especially, as regularly as you feed yourself. Have certain hours of feeding, and do not deviate from these. Your horse, as well as yourself, will not feel so comfortable if feeding is postponed long after the usual hour.

Make no sudden changes, as I have said, in the quantity and quality of your horse's food, but at the same time accommodate the food to the exercise and fatigue which the horse has to undergo. Even if there is a rather sudden change in this respect, your change as to the quantity and quality of the food should be gradually accomplished. I am convinced, from errors and injudicious management in this respect, many diseases are entailed upon the horse.

All grain would prove more nutritive, if ground or chopped up. Some horses, however, chew up their oats much better than others. A good substitute for grinding the grain when that is inconvenient, is to mix with the grain a quantity of fine y chopped straw. If the straw is coarsely chopped, you may probably find, as I have done, that your horse can pick up all the oats and yet leave a very considerable portion of the straw.

Let your horse be driven rather slow at starting, especially if just newly fed or watered. Increase his speed by degrees; and if warm, when within a mile or two of his journey's end, slacken his pace and let him cool down somewhat before being stabled. More anon.

T. C. A.

Clinton, Lenawee Co. Mich. June 22, 1839.

Massachusetts Premiums on Farms.

The Massachusetts State Agricultural society have offered premiums upon farm stock, to the amount of about $400, to be awarded at the Pittsfield and Worcester cattle show next autumn; and they have offered premiums to the amount of $600 for the best cultivated farms in the state. The queries to be propounded to the competitors, and to which they will be required to make answers, serve to indicate the points to be aimed at in good farming, and are therefore of general interest to all who seek to improve their practice; but independent of this, our subscribers in that state have a special claim upon us. We therefore copy from the New-England Farmer, so much of the publication of the trustees as relates to

THE BEST CULTIVATED FARMS.

The trustees again, with a hope of further awakening the attention of the farmers of Massachusetts to a sense of the importance of good cultivation, and at the same time of exciting an honorable competition for exhibiting the best cultivated farms, have decided to appropriate to this object *six hundred dollars* of the funds entrusted to them the present season, as follows:

For the best cultivated farm of not less than 70 acres exclusive of wood land, regard being had to the quantity of produce, the manner and expense of cultivation and the general appearance of the farm,	$200
For the next best,	175
For the next best,	150
For the next best,	75

To obviate the objections which some claimants for premiums may have to making a written statement of the condition, products and management of their respective farms, as heretofore required, the trustees propose to relieve them of this trouble by an inspection, either personally or by an agent, of the farms which may be offered for premium.

The person or persons making the inspection, will require of the respective owners or occupants of farms, answers to the following inquiries:

Of how much land does your farm consist, exclusive of wood land?

What is the nature of your soil—does it consist of sand, gravel, clay, loam or peat?

If of a part or all of the above kinds, what do you consider the best method of improving them?

How many acres do you till, and how many cartloads of manure (meaning by cartloads 30 bushels at least,) do you generally put on an acre?

Is your manure applied in its long, or green state, or in compost?

Do you spread and plough in your manure put upon fields to be planted with corn or potatoes, or put it into the hills?

What is your method of ploughing and cultivating green sward?

How many acres of upland do you mow, and what is the average quantity of hay upon an acre?

How many acres of grass land do you irrigate; at what season and how long do you allow the water to flow your land, and what is the effect?

Do you manure the land irrigated, or any other land you mow, how much to an acre, and what kind of manure do you put on?

How many acres of low land, not suitable for the plough, do you mow, and what is the quality and quantity of the hay cut the present year?

What is your method of reclaiming low, bog or peat lands, and what has been your success?

How many acres of corn have you planted the present season; what was your mode of preparing the ground and the seed, the kind and quantity of manure used to an acre, the manner of applying it, and the quantity of corn raised to an acre?

How many acres did you plant with potatoes the present year; what was your method of planting, your manner of cultivating, and what the average quantity raised on an acre, and what kinds did you plant?

What number of acres of other vegetables did you plant, what kinds, and how many bushels of produce had you to the acre, and to what use shall you apply them?

How many acres of winter or spring grain did you sow the present year; how was the ground prepared; what quantity of seed did you sow on an acre? If you have raised wheat, of what kind, the nature of the soil, and was it sown with or without using lime?

How many acres have you laid down to grass the present season, at what time in the year did you sow it, how much seed to the acre, and was it sowed alone or with a grain crop?

What are your means and what your manner of collecting and making manure?

How many oxen, cows, young cattle, horses and sheep do you keep through the year? What is the size of your barn or barns, and have you a cellar under them; is your manure covered?

Are your cows of native, foreign or mixed breed?

What is your management of calves intended to be raised?

How much butter did you make this year, and how much cheese, and what proportion of it new milk?

How many swine did you keep, what quantity of pork did you make, and of what breed were your swine?

What do you feed them upon through the summer months and on what do you fatten them?

How many cartloads of manure do you take from your cow styes in a year, and of what materials is it made?

What number of hands is employed on your farm, and what do you pay for labor?

What is the number of your apple trees, and are they of natural or grafted fruits?

What number of fruit trees have you exclusive of apple trees?

Have your trees been attacked by canker worms or borers, and what is your method of destroying them?

In the cultivation of your farm, do you allow the use of ardent spirits?

The trustees are desirous that these questions should be answered with as much particularity as possible. The applicant will not, however, be required to answer them under oath, but according to the best of his knowledge and belief.

The trustees hope, and believe that by the method proposed, many important facts may be elicited, and the farming community enable to derive much useful information from the skill and experience of practical farmers.

N. B.—Claims to be addressed to Benjamin Guild, Esq. in Boston, before the first day of October next.

(Form of the Application.)

To Benjamin Guild, Esq., Boston:

Sir: The *subscriber*, living in the town of , hereby makes known his intention of applying for a premium for the best farm, and offers the same for inspection.

On the Selection of Male Animals in the Breeding of Cattle and Sheep.

BY THE RIGHT HON. EARL SPENCER.

More from wishing to set an example to others, than from any hope that what I myself can suggest will be practically useful, I submit to the English Agricultural Society the results of my experience in an important part of that division of farming, to which my own attention has been particularly applied,—I mean the breeding of stock. The part to which the following observations apply is the selection of male animals. A large proportion of farmers breed sheep, and several breed cattle, to all who breed either, this subject is one of great importance.

The object of a certain number is to breed bulls or rams for the purpose of selling or letting them, but that of the majority is to breed oxen or wethers for the purpose of grazing. The first of these classes is very well aware of the importance of selecting good male animals, and profess to spare no trouble, and to be very indifferent as to the expense which they incur in obtaining them: but with respect to those whose object it is only to breed oxen or wethers, I am afraid the case is generally very different, and they take very little trouble and expend as little money as possible in procuring the male animals to which they put their females: that is, they consider as a matter of indifference that on which the profitable or unprofitable nature of their occupation mainly depends.

It is admitted by every one that the bodily and constitutional qualities of the offspring are usually similar to those of the parents, either combining in various proportions the qualities of both parents, or taking entirely after one. I should say, as respects cattle and sheep, that in most cases, the qualities of the male parent predominate in the offspring. I have also observed that the worse-bred the female is, the more will this be the case when she is put to a well-bred male. This observation was first made, I believe, by the late Mr. Berry, in an essay, for which he received a prize from the Highland Society. He accounted for it thus: a well-bred animal means one whose ancestors for several successive generations have all been good, that is, have all possessed the peculiarities in constitution and shape which it is the object of experienced graziers to obtain in their stock. The characteristic, therefore, of the family of such an animal will be such peculiarities; but the ancestors of a badly-bred animal will probably have varied in every possible way, and therefore there will be no distinguishing characteristic in its family; it is consequently most probable that the offspring produced from a cross between two animals so circumstanced will be more like the one in whose family there is a distinguishing characteristic, than the one in whose family no such characteristic exists. The common, but, I believe, mistaken notion, that the offspring from the first cross is better than that from any subsequent one, probably arises from the improvement in the first instance being so much more apparent than, for the reason given above, it is likely to be in any one generation afterwards. Now it is known to all graziers that the attempt to fatten an animal, who possesses no feeding propensities, produces loss instead of profit. If the above observations are correct, the feeding propensities descend from the sire; it is quite just, therefore, to say that a breeder of cattle or sheep, who considers it a matter of indifference what sort of male animal he uses, does consider it a matter of indifference whether he gains profit or incurs loss.

The first object which any breeder of cattle or sheep must keep in view, whether he intends to breed bulls or rams, or whether his aim is merely to breed oxen or wethers, is that the stock which he breeds shall be healthy. The first thing, therefore, to be considered in the selection of a male animal, are the indications by which it may be possible to form a judgment as to his constitution. In all animals a wide chest indicates strength of constitution, and there can be no doubt that this is the point of shape to which it is most material for any breeder to look in the selection either of a bull or a ram. In order to ascertain that the chest of these animals is wide, it is not sufficient to observe that they have wide bosoms, but the width which is perceived by looking at them in the front should be continued along the brisket, which ought to show great fulness in the part which is just under the elbows, it is also necessary that they should be what is called thick through the heart. Another indication of a good constitution is, that a male animal should have a masculine appearance, with this view a certain degree of coarseness is by no means objectionable, but this coarseness should not be such as would be likely to show itself in a castrated animal, because it thus might happen that the oxen or wethers produced from such a sire would be coarse also, which in them would be a fault. Another point to be attended to, not merely as an indication of a good constitution, but as a merit in itself, is that an animal should exhibit great muscular power, or rather that his muscles should be large. This is an usual accompaniment of strength of constitution, but it also shows that there will be a good proportionate mixture of lean and fat in the meat produced from the animal, the muscles being that part which in meat is lean. A thick neck is in both bulls and rams a proof of the muscles being large, and there can hardly be a greater fault in the shape of a male animal, of either sort, than his having a thin neck. I am inclined to say, that in the new Leicester breed of sheep, which is the breed to which I am accustomed, a ram's neck cannot be too thick. Other indications of muscle are more difficult to observe in sheep than in cattle. In a bull there ought to be a full muscle on each side of the back bone, just behind the top of the shoulderblades; he ought also to have the muscles on the outside of the thigh full, and extending down nearly to the hough. It will seldom happen that a bull having these indications will be found deficient in muscle. With respect to rams, my own observation does not enable me to point out any other indications of muscle except the thickness of the neck, which I have mentioned above; if other farmers are able to point out any, I would only say there is scarcely anything to which they ought to pay greater attention.

As I am writing for the use of farmers, it is quite unnecessary for me to attempt to give a description of what is considered a well-shaped bull or ram; it is also obviously impossible to express in words what is meant by good handling. It is sufficient to say, therefore, that no male animal is fit to be used at all as a sire whose handling is not good, and that the more perfect his shape is the better. The above observations apply to breeding generally; for whatever may be the sort or size of the animal intended to be produced, there is no doubt but that good health, propensity to fatten, and good shape, in all cases, ought to be aimed at. But there are not only different breeds, both of cattle and sheep, but experienced and very good farmers differ very much in opinion as to which peculiarities of shape and size are to be preferred, even among animals of the same breed. It is therefore very desirable, before any man commences to breed either cattle or sheep, that he should make up his mind as to the shape and qualities he wishes to obtain, and steadily pursue this object: if he does so, there is very little doubt but that he will succeed in having a herd of cattle or a flock of sheep possessing the characteristics which he at first intended they should possess; but if, on the other hand, he breeds at one time with the view of obtaining animals possessing one sort of shape, and at another time with the view of obtaining animals possessing a different sort of shape, the probability is, that his stock will possess neither the one nor the other in any degree of perfection. Having made this decision, he should take care that the individual male animal which he uses shall possess the qualities which he requires. In addition to this, it is of great importance that these qualities should have been characteristic of the family from which the animal is descended; and if he is old enough to have been the sire of any number of offspring, it is of a great deal more importance still that they should possess them. Because all the perfections of shape and quality which the best judge may wish to find in a male animal are, after all, only indications of what the stock got by him will probably be; the seeing, therefore, what they really are, is much more satisfactory.

There are few breeders, of cattle more especially, who breed upon so large a scale as to enable them to keep many male animals at the same time in use. A man, therefore, can usually only look at the general qualities of the females which he possesses, and observe what are the faults most prevalent among them; these he should be particularly careful to avoid in the male which he intends to use. It is sometimes said that a male animal ought to have no faults, and undoubtedly it would be very desirable that this should be the case; but, unfortunately, no such animal exists. All a man can do, therefore, is to avoid putting a male and female together whose imperfections are the same, so as not to increase the fault already existing in his stock. If a man breeds upon a large scale, and uses several males at the same time, he can, of course, attend to this more effectually than if he uses only one. In this case, he should select and put together the males and females individually, so as to endeavor to correct any imperfections which either of them show. Most breeders of sheep, indeed, do use more than one ram, and all who pretend to take any pains in improving their flock divide their ewes, so as to put them with the ram who will most probably effect this object. I need not say that those (some of whom, I am sorry to say, still exist) who turn two or three rams of different shapes and qualities into a field with all their ewes, without attempting to make any selection among them, have no right to expect to be successful breeders; and if they do expect it, will certainly be disappointed. I believe the general opinion of breeders is, that it is disadvantageous to endeavor to correct any fault in the shape of a female by putting a male to her who possesses, in extraordinary perfection, the merit in which she is deficient, but who in some other part of his shape is faulty. My experience leads me to say that this mode of endeavoring to correct a fault is frequently successful. It would be better that none of the females from which a man intends to breed should be faulty in shape to any considerable degree, but it almost always will happen that some animals, possessing an excellent constitution, good blood, and a great propensity to fatten, and therefore such as the owner would very unwillingly cull, will fail decidedly in some part of their shape. I would say that, when this is the case, it is worth while to try the experiment of putting to them a male remarkable for his perfection in this failing part; and, in my opinion, such a male will be more likely to correct the fault, than one who shows no one part of his shape very superior to the rest.—The late Mr. Cline, whose eminence as a surgeon is very well known, published a tract upon the breeding of domestic animals, which contained, as might be expected, most valuable information. His suggestions are such as ought to be very carefully attended to; but it is probable that his meaning has been mistaken in one recommendation which he gives, namely, that in which he is understood to say that it is always desirable that the male should be smaller than the female. When he makes this observation he is speaking of the crossing of different breed, and probably only means that in a cross between a large breed and a small one, the male should be taken from the small breed, and the female from the large one. It is hardly possible that he intended to say that in the same breed the male ought to be smaller than the female, because this is contrary to the practice of nature. In every description of land animal with which I am acquainted, the males are of a larger size than the females. The attempt also to follow this advice would undoubtedly, in a few generations, so very much reduce the size both of males and females, as considerably to diminish their value. I can say, from my own experience, that some of the best shaped animals which I have bred have been produced by following a contrary course. I prefer breeding from large females; but if I do breed from one which I think too small, I put to her the largest male of good shape that I possess. As one instance among several to prove that this course may be successful, the ox which I showed in the fourth class, at the last Smithfield show, and which obtained the prize in that class, was by the largest bull I have, from a cow so small, that I culled her after she had bred that one calf. It must be admitted that the theoretical reasoning which Mr. Cline adduces in support of this recommendation appears to be very conclusive; but, even in the restricted sense in which I understand it, there is some doubts whether it is practically correct. The most successful cross between two different breeds of cattle, of which I am aware, was the one between a Durham bull and a Galloway Scotch cow, made by Mr. Charles Colling. The produce from this cross sold for enormous prices at his sale, and at the present day a majority of the best short-horned cattle are descended from it. My opinion, then, the result of my own practical experience, is, that if a man considers the female animals which he possesses to be smaller than he wishes, he may safely put them to a male of large size, provided he is well bred, of good quality, and is well shaped. But I am bound to add, that I know, in giving this opinion, I differ from the most skilful and successful breeders with whom I am acquainted.

It follows from the above observations, if they are correct, that the first and most indispensable object which all breeders must try to obtain, whatever may be the sort of animals they wish to have, whatever may be the shape or size they prefer, is that the male animal which they select shall possess a strong and healthy constitution. This is absolutely essential: but it is also most conducive to their success that they shall, after due consideration, make up their minds as to the qualities which they wish their stock to possess; that, having made this decision, they shall steadily pursue the object they have in view, and endeavor to select such males as shall be likely to get offspring possessing these qualities; that they shall carefully and candidly examine the females from which they intend to breed, observe the faults in shape or quality which prevail among them, and select males who shall possess corresponding perfections. That the safest mode of ascertaining what are likely to be the qualities of the produce from a male in future is, where there is the opportunity, to see what are the qualities of the offspring already produced from them; then, the next to this is, to observe what are the qualities of the family to which he belongs; and that in the case of not having the opportunity of making use of either of these guides, they may assume that it is probable that the qualities of the individual himself, which in all cases ought to be attended to, will, if he is well bred, descend to his offspring.

It has already been said that there are two classes among the farmers who breed cattle and sheep, the one, of those who breed bulls or rams, and the other, of those who breed oxen or wethers for the purpose of grazing only: the above observations are intended to apply to both. But much more attention ought to be paid by the first of these classes to the selection of the animals from which they breed than is absolutely necessary in the other. This is essential to their own interest, because a male animal very often shows faults in his shape which if he had been castrated, would not have appeared. It frequently, therefore, happens that the produce from a bull or ram may prove excellent cattle or sheep for grazing purposes only, but may be totally unfit to be kept as the sires of future stock. Their duty also to those who hire or buy from them imposes upon them the obligation to pay the strictest and most minute attention to the qualities of their male animals, more particularly, they are bound not to offer to their customers any one, of the health of which they have any reason whatever to doubt, whether this doubt arises from any weakness of constitution, which may have appeared in the individual himself, or whether it arises from their knowledge of the family from which he is descended. They are bound also, not to keep as males any animals who are not perfectly well bred. It does not follow from this, that a long pedigree is in all cases necessary, although it is generally desirable; but it sometimes happens that a female, of whose pedigree the owner is ignorant, will have produced offspring which have all possessed extraordinary merit, and which have proved themselves good breeders also: a male descended from such a female may be considered perfectly well bred on her side; and will, very possibly, prove a better sire than many whose pedigree on paper is much longer.

In paying this minute attention to their occupation, the breeders of male animals have some advantages not possessed by others: they have generally the opportunity of knowing accurately what are the characteristics of the families from which they breed, an opportunity not possessed by those who breed only for grazing purposes. In order to make a proper use of this advantage, they ought to keep accurate pedigrees of their cattle and of their sheep, and as far as possible, when they put the males and females together, recollect what have been the respective qualities of the ancestors of each. They have also the opportunity, by using a male cautiously at an early age, of knowing by experiment, whether the stock produced from him is good or bad, before they run the risk of injuring their stock materially by using him largely. This may be ascertained with sufficient accuracy when the produce are very young: for an experienced breeder can judge with tolerable certainty what will be the shape of a calf or a lamb when it grows up, by seeing it soon after it is born, and before it has begun to lay on fat. Nor is it necessary to see many of the produce for the purpose of deciding what its general characteristics will probably be. I admit that in saying this I am speaking more from my experience as a breeder of cattle than a breeder of sheep, but I believe the same observations will apply to both. It is certain, however, that seeing four or five calves from a bull, ought to be a sufficient guide to the breeder as to whether he will be valuable as a sire or not. Unless there is a family likeness which generally pervades through the produce from a bull, although he may be valuable as the sire of oxen, it will not be safe to use him as the sire of bulls. The seeing, therefore, four or five calves will prove to the breeder whether there is such a family likeness among them, and whether it exhibits itself in such qualities as indicate that when they grow up they will be valuable animals.

There is one failing to which all breeders are liable, but to which the breeder of male animals, from the greater interest attached to his occupation, is more peculiarly liable, and against which he ought most carefully to guard himself;

this is, too great a partiality for animals bred by himself. In order to guard against this he ought to occupy himself more in looking for faults than in discovering merits in his stock; he ought to listen to every criticism he hears made upon them, even by those whose judgment he does not hold in high estimation—not, of course, with the view of being satisfied at once that the criticism is correct, but with the view of satisfying himself, by accurate and candid examination, whether it is so or not; and he ought frequently to see the stock belonging to other breeders, and fairly compare its merits with those of his own.

I think it most probable, that in the foregoing observations nothing will be found which will give new and useful information to practical farmers; but I have been induced to submit them to the English Agricultural society, because I conceive that one of the great objects of that society is the diffusion of knowledge connected with every branch of farming. The best way in which it can be enabled to effect this object, is by those of its members who have paid attention to any of the divisions of farming operations, communicating to the society the results of their practice and experience. It will then be for the society to circulate, by any means in their power, such of these communications as it shall appear to them are likely to be useful to those engaged in the cultivation of the land. With this view I place this paper at their disposal.

Law Reforms.

It was, we believe, Sir Matthew Hale, who called law the perfection of reason; and as the means of right, and the prevention of wrong, it is entitled to the respectful consideration of all. There is reason, however, to fear, that law is sometimes perverted from its high purposes and legitimate functions, and made to minister to the ambitious, the selfish, the avaricious, and the baser passions of mankind, that right is forgotten in acquired power, and that wealth, rather than justice, is the lever that actuates too many of its ministers and professors. It cannot be disguised, that practices are covered with the sacred mantle of the law, and performed under its ostensible sanction, that, freed from this protection, would subject the performer to the most serious charges, affecting both honor and honesty. So flagrant have some of these practices become; so utterly subversive of all right and justice; so demoralizing and oppressive in their results; that public opinion had been gradually awakening to these enormities, and was prepared to demand their abatement. It has become apparent, that the system of law practice, or carrying into effect the decisions intended to give justice to all, the humblest as well as the highest, needs a thorough reform, or a state of things will soon, if it has not already in a great degree arrived, in which redress of wrong to the poor will be hopeless, the name of justice a mockery; petty quibbling and a scramble for costs reign triumphant in the temple of the laws; while the great mass of the people will be compelled to assume the power they have delegated but never alienated, the power of doing justice to themselves. These facts, so obvious to all, were regretted by the more honorable and high-minded part of the profession, who felt that the disgraceful practices of some, would be used as a reproach to all, and they were of course willing to adopt a system of reform that should remove the evils so justly obnoxious, and which had enabled the litigious pettifogger, the half learned practitioner in the courts of law, to cheat the public, accumulate costs, and ruin thousands.

The iniquities and extortions under colour of the law, though known to be frightful, had never been fully unveiled to the people; but now, when the public feeling seemed to demand expositions of this nature, the press began to cooperate in showing up the manner in which the framer, the expounder, and the administrator of the laws, in too many instances, acted more with regard to the fees, than the sacred principles of right. The leading paper of the Knickerbocker for January, 1839, evidently by 'authority,' was an admirable, though an alarming exposition of the practices resorted to, to delay justice, procrastinate causes, accumulate costs, and ruin the clients in our courts. The 'Memorial,' a paper conducted with spirit and ability at Seneca-Falls, was set up with the avowed purpose of advocating a reform in our system of jurisprudence, and its successive numbers have demonstrated beyond a peradventure the necessity existing for such a movement. The practices exposed in these papers, as resorted to by some from whom the public had a right to expect better things, are such as would, or should, exclude the perpetrators from the society of honest, honorable men. The quibblings, the repetitions, the endless accumulation of words and folios, resorted to, to increase the costs, and retard, if not utterly subvert all salutary action of the law, revealed in the official records and papers there published, show a system of peculation, not to say swindling, worthy of the best instructed disciples of Daines Barrington.

In compliance with the wishes and the demands of the people, a commencement was last winter made, which, if followed up as it must be, will restore the administration of the laws to its high standing, which in the nature of things it deserves. The great object must be, to simplify and render all the laws as easily understood as possible, to reduce the costs to a liberal, not an exorbitant compensation; to render the means of justice speedy, and open to all; and to punish without mitigation or escape, the man who degrades the name of lawyer by extortion, or legal dishonesty. A good beginning was made in the reduction of costs in some of our higher courts, at the last session; and the schedule of fees must undergo still further examinations and reductions.—None are more interested in these things than the farmer, from whose hard earnings so large a portion of these exorbitant fees are annually wrung. It is he who suffers most from the law's delay, and who pays most dearly for the vexations and wrongs, which the insolence of wealth enables the avaricious or the unprincipled to heap on the poor. On these and kindred subjects the people must and will be heard. In submitting to the government of laws, mankind yield or delegate a part of their native rights, to secure the peaceable use of all: when this concession fails, they are at liberty to resume. Men submit to laws to escape from oppression; when the elements of oppression and wrong become concentrated in the laws themselves, by the weakness or the wickedness of the enactors, then they come in contact with the unalienable rights of man, and will be found but threads of burnt tow on the limbs of a giant.

If the profession of law has become so thronged, that such practices are necessary to give its followers a living, then let them go back to the field or the workshop and obtain an honorable livelihood, where they can eat honest bread. Our country is broad, our lands are fertile, competence and honorable distinction may be found in pursuits where temptations to fraud are not so strong as in the profession alluded to, and in which a man may be useful without the constant danger of becoming infamous. Many of the noblest spirits of our land are lawyers: would that we were not compelled to add, some of the meanest and vilest are also lawyers. The first are as deserving of honor, as the latter are of contempt. Any system of reform that shall have a tendency to do away the evils so justly complained of, give equal and exact justice to all, strike at the root of all extortion and oppression, will be sure to receive the support of the first, and encounter the opposition of the last. By their fruits ye shall know them. We hope this subject will not be permitted to sleep, that the advantage gained will not be lost; but that a reform, equitable, just and thorough, will be carried through our system, retaining all that is valuable, giving ample compensation for services performed, but placing the power of oppression, contumely and wrong, beyond the reach of those who now are the dread and the scourge of the people. In this reform we are sure of the support of the intelligent, the able, and the honorable lawyer; while in the ranks of opposition will be found those who fight for spoils, and whose censure is praise.—*Genesee Farmer.*

Culture of Ruta Baga.

[*From the Farmers' Monthly Visitor.*]

Hon. Isaac Hill—Dear Sir—Believing ruta baga to be of great value to the stock farmers, and as the season for sowing it is at hand, I send you an extract from my farm journal relative to my mode of culture the first year, though, as it was my first experiment, I am far from thinking it to be the best mode. However, as I was pretty accurate in detail, its publication may be of use to my brother farmers, by inducing some one better acquainted with its culture than myself, to point out the errors in my process.

In the fall of 1836, I broke up three acres of green sward; the soil a stiff loam; upon which I carted 150 single loads of coarse manure, and in 1837 planted with potatoes, there being nothing peculiar in the management, or extraordinary in the crop.

In the spring of 1838, I carted on sixty loads of well rotted manure, which I ploughed in, so soon as the ground was sufficiently dry, and on the 27th May I again ploughed, harrowed, and after rolling smooth, marked it into squares of eighteen inches, and planted by dropping two or three seeds in each intersection, which was done by taking the seed from a box, say a common tin dropping box, with a single hole in the top. I sowed from the 1st to the 4th of June; on the 23d began to weed, thinning out where the plants were too crowded, and setting out where deficient, which I continued to do occasionally when other work did not press, till the 29th July. On the 26th October, I began to pull and cut, finishing on the 9th of November; and I found the plants last pulled as uninjured as the first, although they had been exposed to several severe frosts. They were pulled by hand, the workmen striking two plants together to shake off the dirt, and then throwing them down, where they lay spread for three hours to dry the loose dirt that still adhered to them; the tops were then twisted off, and the plants thrown into heaps for carting, so that each root was handled three several times. They might have been got into the cart with less labor, but my object was to get them into the cellar in a tolerably clean state. Having heard much of the difficulty of keeping them in cellars, from their tendency to rot, I stored in one cellar 1,500 bushels without injury to a single root, and I have now, (May 5,) more than 100 bushels as full and as fair as when first placed there. The cellar was thirty feet square, on the bottom of which, eight inch timbers were placed, and covered with plank two inches apart. The whole was divided into two bins, with one foot space between the bins, and one foot between the bins and cellar wall; the sides of the bins being made with narrow boards, with a space of four inches between each board.

I fed out my twelve hundred bushels to my sheep, six hundred to my horned cattle, and the remainder to my horses. They all ate with avidity, preferring them to potatoes. For my horses and cattle they were merely cut with a spade; for the sheep they were passed through a vegetable cutter. They were carted in two carts, each containing thirty baskets holding more than a bushel, and weighing seventy-four pounds. The number of baskets was twenty-one hundred, and the whole weight *seventy-seven tons.* Number of roots, 36,000—as put in the extract from my journal alluded to above. I am, sir, very respectfully, your ob't servant,

LEONARD JARVIS.

Ruta Baga,	*Dr.*
To interest on three acres, at $100 per acre, ...	$15
Twice ploughing three acres, ...	6
Harrowing and rolling, ...	4
Seed, ...	2
To 139 days' work on above, viz: 9 days sowing, 25 weeding, hoeing and setting, and 36 drying and cutting—130 days, or five months, at $13 per month, ..	65
To 22 weeks' board, at 9s. per week, ...	33
	$125
Cr.	
By 2,100 bushels, at 10 cents, ... $210	
Profit, estimating at 10 cents, ...	32
	$210

Claremont, May 5, 1839.

Remarks.—Compared with the price of other crops, this ruta baga was richly worth twenty cents the bushel: say it was worth only fifteen cents, the nett profits on these three acres of ground were *one hundred and eighty-seven dollars.*

We are highly pleased to exhibit this evidence from one of the first, and we believe the most extensive practical farmer in the state of New-Hampshire, in favor of the root culture. He shows by this experiment what much manure will do for the ground for a succession of years: it gives double payment in a single year for the labor bestowed, and this double payment will extend itself into a series of from four to ten years, according to the capacity for retention of the soil to which it is applied.—*Ed. Far. Mon. Vis.*

We call particular attention to the following article from the New-England Farmer. It is fraught with truth.

Cause of High Prices.

But one great and prolific source, as we honestly believe, of high prices, deficient labor, the luxury, waste and servility which prevail among us, is in the multiplication of banks beyond the business wants of the community, the extension of paper money, and the abuse of the credit system. Our honest conviction is, that the enormous increase of bank capital beyond all reasonable limits, is destined to prove to the country in its various influences a source of immense evil. The calamities from which we have just escaped, are to be directly traced to this as their great origin; and, as matters are now going on, we have only to look forward to another explosion, as disastrous as that from which we have so recently recovered—for come it must. Its arrival in the natural course of things is as certain as the descent of water upon an inclined plane, or the passing of the sun over the meridian. The creation of immense amounts of purely artificial and fictitious capital, produces a dangerous delusion with individuals and on the public mind. If its effect were merely to increase the facilities and stimulate the powers of production, it would so far be well; but this it does not do excepting in a very partial degree, and in an indirect form. This money is loaned to what are called men of business—a class of men, who as far as they are money brokers, are the mere exchangers of commercial products, without any increase of their value, or speculators in lands, who add little or nothing to the wealth of the community. The increase in the nominal value of real estate is of no advantage to the community, unless it is based upon some positive improvement, or increased productiveness of the soil. If a piece of land is sold to-day at five dollars an acre, and next week it is valued at ten dollars an acre, without any change whatever in its condition, how is the community in any respect benefitted, or its wealth increased? But on the other hand, the obtaining of land for agricultural purposes, for production, and the actual creation of wealth, is by this enhanced price rendered the more difficult to the man whose labor is his only capital—the man of all others in the community the most to be encouraged.

Then, again, the abundance of money itself lessens its value, and operates to raise the scale of prices. The facilities of procuring credit and money induce recklessness—lead to all kinds of speculation—create a distaste for labor—encourage the most luxurious expenditures—relax the bonds of moral principle—and convert the community into a population of gamblers. It is the true secret of the enormous frauds with which our community has been convulsed within the last two years, and of the prevalence of the gross and immoral principle, that a neglect to pay one's debts to a corporation, or a fraud upon a corporation, is a different matter from one committed upon an individual.

In fine, it is the moving cause and prolific source of speculation—speculation, a matter pregnant with evils, and from which no more good has accrued, or can ever accrue, to the community, than from any other form of lottery gambling. These are, to a certain and considerable extent, the causes of the high prices of living; and under this system they must continue until we have another periodical explosion. There is no cure or preventive. There is not moral soundness enough in the community to afford any hope of amendment or of change, until another fit of delirium tremens brings us up, as the sailors say, "all standing," rubs out old scores, and then leaves us to start again in a new course of unbridled profligacy, vulgarly called prosperity.

Pruning.

A great variety of experiments made in Europe by Knight, Van Mons, and Thaer, and in this country by Buel, Kenrick, and others, have been made on the subject of pruning trees, and though the results did not perfectly agree on all points, yet they seem to fully justify the general conclusion that the best time for pruning trees is that period in midsummer in which there appears a cessation of the sap's ascent, and which lasts some three or four weeks. Those who have paid attention to the growth of trees must have remarked that the period of increase is divided into two seasons, during the first of which, or the one most active, the shoots that form fruit, flower or seed buds are formed; and the other or later summer's growth is confined to the shoots that produce wood buds only.* "After the second growth is completed, the effects of the descending sap in the formation of new bark, is apparent in the healing up of new wounds, in parts of the stem or branches, which now proceeds with more activity than during any other season of the year. Branches pruned off smooth at the stem, though the latter be young, healthy, and containing a perfect pith, before or shortly after the completion of the midsummer's growth, do not produce shoots from the edge of the wounds caused by their removal, which always happens, more or less, when pruning is performed on free growing trees after the fall of the leaf, and before the full development of the spring shoots and leaves. It is to be observed, however, that the reproduction of branches from the edge of a wound is greatly assisted by leaving a portion of the branch or shoot, on the parent branch or stem." (Treatise on Planting.)

The end desired to be attained by the operation of pruning must be kept steadily in view, or injury instead of benefit may be the result. If the tree is intended for timber, the leaves and buds that elaborate the sap, and increase the trunk by the formation of an annual circle of new wood, should be kept as far from the root as possible, as in this way

* We believe this is an error. Nature provides wood buds first, and fruit buds last. Trees have always leaf buds, though they do not always have blossom buds. Hence, a tree that bears abundantly, and bears its fruit late in autumn, is seldom an annual bearer, because it requires all its sustenance to mature its fruit, and provide wood buds for the coming season. And hence, trees ripening their fruit early, as the cherry, gooseberry, currant, early apple, &c. are often annual bearers, because the season permits them to ripen their fruit, mature their wood buds, and also to produce new fruit buds for the coming season. A ring-barked limb will give fruit buds, because the elaborated sap is all retained in it, while if not ring-barked it might produce only wood buds, because a portion of the elaborated sap passes to the trunk and roots.—*Cultivator.*

only can the greatest quantity of timber be produced. In this case, the trunk should be kept free from branches, the leading shoot should carefully be preserved, and the top kept in a crown like form. Nature must be followed in this respect, and the tall beautiful trunks of our native forest trees will be the result. For fruit, a low branching top, spread and exposed to the sun as widely as can be, is to be preferred; and hence, the leading shoot when the tree is at a proper height must be carefully cut out, and the lateral branches cut and pruned with direct reference to this effect. Fruit trees must be pruned frequently, or their tops become woody, close, and the fruit will necessarily prove inferior. —*Genesee Farmer.*

Eggs.

Almost every body loves good fresh eggs, and with or without glasses or silver spoons, can contrive to eat them, whether boiled or fried, raw or roasted, made into custard with sugar and spices, or swallowed gently with a bordering of old port, they agree with the palate and the stomach, and neatly laid out with fair slices of bacon, they form a repast within the reach of all, and to be despised by none. But though most farmers keep fowls, and *raise* their own eggs, there are many who have not yet learned the difference there is in the richness and flavor of eggs produced by fat and well fed hens, and those from birds that have been half starved through our winters. There will be some difference in the size, but far more in the quality. The yolk of one will be large, fine coloured, and of good consistence, and the albumen or white, clear and pure, while the contents of the other will be watery and meagre, as though there was not vitality or substance enough in the parent fowl to properly carry out and complete the work that nature had sketched. In order to have good eggs, the hens should be well fed, and also provided during the months they are unable to come at the ground, with a box of earth containing abundance of fine gravel, (if of limestone, so much the better,) that they may be able to grind and prepare for digestion the food they receive. Fowls form no small item in the profits of the small farmer, and few creatures better repay the care and attention they receive. Of eggs, those of the domestic hen are decidedly the best, but those of both ducks and geese may be used for some of the purposes of domestic cookery. Eggs can be kept any length of time, if the air is perfectly excluded, and the place of deposite kept at a low temperature."— *Genesee Farmer.*

An account of a comparative trial of stable manure and bone dust for raising turnips on a clay soil.

BY MR. HENRY MAXWELL, OF CALDERWOOD.

The following are the particulars of the turnip crop which was raised by stable manure and bone dust on Sir William Maxwell's property of Calderwood, this season.

The nature of the soil where the turnips grew may be described as a strong loam on a retentive clay bottom. Before draining, the field generally was very wet and sour, but a thorough application of the cross or branch drain system completely divested it of all moisture; and as the ground was ploughed and cleared under favorable auspices, the condition of the land at the time of receiving the seed was very satisfactory. It may be proper to remark, that the field, which was old lea, was drained in the beginning of 1832, a crop of oats taken off it during that season, and prepared for turnips during last spring. In addition to the quantities of manure laid on the land, as will be found in the statement below, seven and a half chaldrons of lime, of excellent quality, were applied to each acre (the Scotch). The seed, which was of the finest quality (procured from Mr. Lawson,) was all deposited at rather an early period. Where stable manure was applied, the braird came away at first more rapidly and vigorously than was the case with the bones; but, ultimately, the bones gained ground, and, if any thing, got rather the start of the stable manure in point of *shaw* or leaves. The whole field brairded beautifully, with scarce an exception, and the crop did not suffer in any degree from the ravages of the fly. In order to ascertain the results of bone and stable manure in regard to the produce of turnip per acre, the most accurate calculations and trials were made, and I have no hesitation in affirming the correctness of the statement in all particulars. In conclusion, I have merely to remark, that the quality of the soil is by no means particularly well adapted for turnip culture, partaking, as it does, rather too much of the clayey character, for which reason also, there is little doubt that the comparatively unfavorably development of the effects of bones as a manure is chiefly to be ascribed. As to the quality of the turnips produced, the specimens which I have sent to Mr. Lawson's very interesting agricultural museum will best testify. They were carefully selected, with a view of furnishing a fair average of each description. This is the statement referred to.

Swedish—30 cart loads stable manure, per Scotch acre, produced	20 tons.
60 bushels crushed bones, per ditto,	24
Dale's Hybrid—30 cart loads stable manure, per ditto,	33
60 bushels crushed bones, per ditto	31
45 ditto ditto, per ditto	29
Yellow Bullock—30 cart loads stable manure, per ditto	29
60 bushels crushed bones, per ditto	23
Globe—30 bushels crushed bones, per ditto.	25
25 ditto ditto, per ditto ditto	23 ton 18 cwt.
No stable manure.—*Quarterly Journal of Agriculture.*	

* As our cotemporary teaches us how to *make* good eggs, we beg to reciprocate the favor, by advising him how to *cook* them. To be nutritious and healthful, and to suit most palates, the yolk of an egg should not be cooked hard, and the white should be merely cooked to a jelly, the consistence of a custard. This is best accomplished, neither by boiling, frying nor roasting—but by candling, that is, by turning upon it scalding water, either in a candler or other close dish. In this way eggs may be properly cooked, and by repeating the hot water, or leaving them to lay in it a longer or shorter time, they may be easily graduated to the liking of every one, without trouble or waste.—*Cultivator.*

On the comparative value of the Turnip and Potato Crops.

Swedish turnips should be sown on or before the middle of next month, the different kinds of the Aberdeen and Dale's Hybrid, about the latter end of it, or early in June. The Globe, Norfolk, and Tankard turnips may be sown from the middle of June till the middle of July, but there is better chance of success when they are sown from the middle till the latter end of June.

Some farmers complain of the succeeding crop being less productive after turnips than after potatoes; for our own part, we never saw any just ground of complaint where the culture and management of the turnip crop was judiciously performed, and we consider the potato crop to be comparatively exhausting, and less profitable than turnips. This we shall endeavor to show. The same labor and manure is necessary for potatoes with this exception, that the farmer has the advantage of preparing his ground for turnips at a comparatively slack season, and every opportunity afforded for thoroughly eradicating weeds, which advantage, (and it is by no means a trifling one), is not allowable at the early period when potatoes are put into the ground. The potato crop is chiefly transferred to the market, and consequently returns a very inadequate quantity of manure to the soil; whereas the turnip crop, with rare exceptions, is consumed upon the farm where it is produced, and by the large quantity of valuable manure accumulated by their consumption, turnip is the most enriching crop under cultivation we know of.

TO SEED AN IRISH ACRE WITH TURNIPS.

The produce of an Irish acre of turnips may be reckoned at 40 tons, which will maintain (at least) four horned cattle for five months. Each of these will make 1*l.* per month in value during that time, amounting to	£20	0	0
And the quantity of manure made during that time will be worth	16	0	0
	£36	0	0
Deduct price of seed	4	0	
	£35	16	0
On the other hand, an acre of potatoes may be calculated to produce upon a fair average about 400 bushels, which at 1*s.* per bushel, amounts to	£20	0	0
Deduct price of seed	1	15	0
	£18	5	0
Leaving a balance in favor of turnips of	£17	11	0

And the loss of labor, and expense of transferring the potato crop to market, far more than counterbalancing the expense of attendance of cattle, &c.

We are aware that many farmers derive a larger produce of potatoes per acre than we have mentioned, but this is only the exception, not the general or average produce.

No crop, which can be raised at so cheap a rate will maintain such a number of animals per acre the consumption of which will return such a large quantity of valuable manure to the soil, nor enable the farmer to increase the fertility of his farm equal to the turnip, and we are happy to see that their culture is yearly extending, and we hope ere long to see the whole farmers in the kingdom thoroughly alive to its advantages.—*C. in Farmers' Magazine.*

The Productive Powers of Nature.

The powers of nature to create vegetable productions appear never to diminish, the process goes on year after year with increasing energy, and brings forth an increase of vegetable matter to be again decomposed and returned to the soil. This is the natural process by which the decomposing vegetable matter which we find in the soil is formed; and there has been a continual succession of production, decay, and reproduction, of vegetable matter going on ever since nature first sprung into existence, producing vegetables which, when dead, are decomposed into the elements of which they were originally formed.

No loss is sustained by the decomposition of vegetable or animal matter in the soil, all is reduced to the first elements of plants which give fresh energy to vegetation by again entering into vegetable composition.

Thus the process of the growth and decay of vegetable matter goes on in a continual succession, and the decay of one crop becomes the nourishment of the next.

When nature is left to herself, the accumulation of decomposing vegetable matter on the surface becomes great; and if the soil is not possessed of the property of hastening their decay, the vegetable matter is merely increased on the soil, without adding to its productive powers.

On a careful examination, we think, it will be found that the production of vegetables never exhausts any soil; the yearly growth of grass with its decay, adds yearly to its productiveness, and even a plentiful crop of weeds, when allowed to decay on the land which produced them, has the same effect; and thus it is, that land, which has been worn out by close cropping, is by slovenly farmers left for nature to improve.

When the natural pasture is consumed by stock it is converted into animal food for man: and the excrement of the stock being left on the soil forms a rich decomposing animal manure, which gives to the soil increased energy to reproduce an increase of vegetable food for an additional quantity of stock.

Pasture land is full of vegetable fibre, from the surface down as low as the roots of plants descend. Some are the recent roots of grasses, others are those of every stage of decomposition. In arable land scarcely any vegetable fibre is to be found; this circumstance should teach us, that to form a good pasture, we should fill the soil with vegetable fibre as a manure, where we convert arable into pasture land.

The very small proportion of vegetable matter which is contained in the most productive arable soils, would almost seem to indicate that their richness does not depend on the decomposing vegetable matter, but on something else; for if all the straw or refuse of the crops it produced, was returned to it after it had passed through the stomach of some animal, this would scarcely be equal to one-third of what the earth produced.

A judicious succession of crops, and a profitable consumption of the produce by sheep on the ground, return to the soil such a quantity of manure as to give an additional means of increasing its productiveness.

"Water is necessary to the growth of plants. It is essential to the juices or extract of vegetable matter which they contain, and unless the soil, by means of comminution, be fitted to retain the quantity of water requisite to produce those juices, the addition of manure will be useless. Manure is ineffectual towards vegetation, until it becomes soluble in water; and it would even remain useless in a state of solution if it so absorbed the water as entirely to exclude the air: for in that case the fibres or mouths of the plants would be unable to perform their functions, and they would soon drop off by decay." 179, Steward.

It is necessary that the animal and vegetable matter in the soil should have this decomposing disposition, and the soil have it in proportion, to the proper admixture of the materials of which it is composed.

A certain degree of heat, the influence of the atmosphere and water, are necessary to carry on the decomposition of animal and vegetable matter in the soil. The best constituted soil therefore has the power of imbibing, retaining, and giving up to plants a proper degree of heat, air and moisture. When the atmosphere is warm, moist, and sultry, vegetable life is in the greatest vigor, which would indicate these to be necessary to vegetable life if not the very principles on which it depends.

Soil should not only have an affinity for the moisture of the atmosphere, but it should also have the property of readily transmitting it to the vegetables which grow in it.

The soil, therefore, which is best adapted for retaining and transmitting in all circumstances of wet and of dry weather, the necessary quantity of moisture to growing plants, may be reckoned the best and most productive.

If we impart to any soil that which induces vegetation, we improve it and increase its productiveness; but if we in any way withdraw from it that which tends to produce vegetation, we injure it and may make it steril. Barrenness in soil is produced when the component parts of it are so firmly united, that air, water, and the influence of the sun cannot enter into combination with it. When a soil is pure clay, it is sterile and worthless, and so is that which is pure sand. The former resists effectually the enriching influence of the rains and dews, which merely fall on its surface, and either run off or lie there, without penetrating into it. The sun and wind also may beat on it and blow over it, but they can never penetrate its mass to awaken up the dormant energy that lies within: they only have the effect of their repeated attacks to dry and harden the surface, crack it into irregular portions, and more firmly to lock up any languid and dormant principles of vegetable life that may be within the mass. The latter is so porous and loose in its texture that the rain and dews no sooner fall on it, than they pass through it rapidly like water through a sieve, the rays of the sun and the wind evaporate and dry up the last particles that remain, producing only a transitory effect on vegetation, and because they have no regular supply of moisture, the plants soon wither and decay.

The energies of the soil are frequently held in bondage by some pernicious quality inherent in it, or imparted to it, which if neutralized or extracted the soil would become productive.

When light, sandy, and vegetable soils are artificially made lighter, they possess little of the principles of vegetation. The mechanical disposition of a clayey soil is also deranged by improper treatment, such as trampling or ploughing it in wet weather; and although the soil has a full supply of animal and vegetable manure in it, yet the mechanical derangement so totally locks up all its energies, that the fermentation so necessary is altogether stopped, and complete barrenness is the result.

This we have frequently observed to occur from land being trampled by sheep in eating off turnips from strong clay soil during wet weather, in the early part of spring.

They convert the surface into a complete puddle, and when it becomes dry, the parts composing the soil are so closely united together, that it is like bricks dried for the kiln, and is entirely unfit for the production of plants. It is evident that the causes of sterility in these soils are opposed to each other; each therefore will require a mode of treatment peculiar to its case. The light, sandy, and vegetable soils, that are too friable, must be artificially rendered more firm; and the too tenacious clay soils must be made artificially friable and kept so, and be pulverized and mechanically altered before we can expect them to become productive. It is evident if these two soils could be mixed together, the mixture, with a proper quantity of vegetable and animal manure, would make a good productive soil.—*Morton on Soils.*

Young Men's Department.

Chemical Catechism—Chapter VIII.

[*From Parkes' Chemical Catechism.*]

OF SALTS.

What is a salt?

When an acid is combined with an alkali, an earth, or a metallic oxide, it forms what is called *a salt*. Such compounds were formerly called *neutral* salts; but that term is now applied only to those salts in which there is no excess either of acid or of base.*

How many salts are there?

As the acids are capable of forming various combinations with the different earthy, alkaline, and metallic bases,† the

* To give the pupil a clear idea of this class of bodies, it may be advisable to set him to form some of the salts from their component parts. He might, for example, be directed to pour a little sulphuric acid into a solution of soda in water, to evaporate the superfluous water, and then to notice the crystallization of the newly-formed salt; for, if the liquor be allowed to stand for a few hours undisturbed in a cool plate, the salt will be seen to shoot into beautiful crystals of sulphate of soda.

† It should be recollected that, besides the various salts which are formed artificially in the laboratory of the chemist, there are many mineral bodies belonging to each of these

precise number of the salts is not known.* Probably they amount to nearly two thousand.†

What method has been taken to distinguish the different salts?

Modern chemists have adopted a new nomenclature for this purpose, which is as simple and ingenious as it is useful.

How are the salts distinguished by this means?

In this nomenclature every salt has a double name, one part of which indicates its acid, and the other its base; so that, in a collection of many hundred different salts, the composition of each is immediately known by its appellation.

Can you explain the manner in which this is effected?

All substances which are compounds of metallic oxides, earths, or alkalies with the sulphuric acid, are called *sulphates;* with the muriatic acid, *muriates;* with the nitric acid, *nitrates;* with the carbonic acid, *carbonates, &c. &c.*

Do the advantages which we derive from this nomenclature compensate for the inconvenience of changing the names of so many substances?

The new nomenclature, by its scientific classification of bodies, gives such a facility to the acquisition of chemical knowledge, and this alone would have been sufficient to have justified chemists in adopting it; but its contrivance for pointing out the *nature* of the substances bearing the new names, gives it advantages far surpassing every inconvenience attending the alteration.

Describe the nature of some of these advantages.

In conformity with this plan the saline compound, formerly called *Glauber's* salt, is now called sulphate of soda, because it is a combination of sulphuric acid and soda;‡ what was called *gypsum*, or plaster of Paris, a compound of lime and sulphuric acid, is now called sulphate of lime; in like manner, what was called *green copperas* is now sulphate of iron, that substance being a compound, not of copper, as the old name seemed to import, but of *iron* and sulphuric acid.

Have the framers of this nomenclature been equally happy in the choice of names for the salts which are composed with the other acids?

Yes: the principle upon which the nomenclature is formed is such, that the composition of every salt is designated by an appropriate name with the utmost perspicuity.

According to the new nomenclature, what is the common culinary salt called?

Common salt is called *muriate of soda;*§ that is, a composition formed of soda and muriatic acid.

What do you call salt-petre?

Salt-petre is called *nitrate of potash;* it being composed of potash and nitric acid.

What is chalk now called?

Chalk, being a compound of lime and carbonic acid, is called *carbonate of lime.*

You have said that these bodies were formerly called neutral salts,—why is not that term now applied as before?

Because no salt can strictly be called *neutral*, except such in which the acid is completely neutralized by the base, and the base by the acid, so as to be mutually saturated by each other.‖

Is not that the case with all saline compounds?

No: some have an excess of acid, as cream of tartar and most of the metallic salts; others have an excess of base, as common borax.

How are such salts distinguished?

When a salt is found to contain an excess of acid, the preposition SUPER is generally prefixed to its name; but when it does not contain a sufficiency of acid to saturate the base, the preposition SUB is added: thus we say super-tartrate of potash, and sub-borate of soda.

Some salts are formed with acids not fully oxygenized, as the sulphurous and phosphorous acids: how are such salts distinguished?

All salts that are composed with acids ending in *ous*, take an ending in *ite*, instead of *ate;* as *sulphite* of lime, or *phosphite* of potash.¶ * * * *

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classes which are found native. These will be noticed in their proper places as we proceed.

* Fourcroy reckons that there are 134 *species* of salts; but how many distinct salts there are he has not calculated. Having, says he, 32 acids, and 57 bases, it would appear at first sight that there must be 1824 salts: but there are several of the metallic oxides which cannot combine with many of the acids; which is also the case with silica, one of the earths. However, to compensate for this deficiency, there are several acids capable of combining with two bases at once. These are called *triple salts.* Besides those there are super-salts, and sub-salts.

† Should a young person express his surprise that the number of one class of bodies should be so great, he may be told that nature seems to aim at variety in all her productions. Saint Pierre informs us that there are 6000 species of flies, and 760 different butterflies. Ray computed the number of *species* of insects at ten thousand. There are above 1000 different species of beetles known to exist in Great Britain only, independent of what are found in various other parts of the world.

‡ It is necessary to remark, that when an acid is combined with *two* bases, the names of both are subjoined to that of the acid. Thus we say sulphate of alumina and potash, and tartrate of potash and soda.

§ Formerly the word SALT was confined to muriate of soda. No other substance was then known as a salt.

‖ The propriety of restricting the use of the term *neutral* will appear, if we consider that we have some bases that combine with more than one dose of acid, and thereby form salts which differ in their appearance and properties. Thus we have *sulphate* of potash, and *super*-sulphatet of potash. The one is a neutral salt, the other a salt with excess of acid. These salts are however now called sulphate of potash, and bi-sulphate of potash. These are more appropriate terms, because 100 parts of potash combine with 32 parts of sulphuric acid to form the sulphate: and with twice that quantity or 164 of acid to compose the bi-sulphate. In like manner we now speak of carbonates and bi-carbonates, and of oxalates and bi-oxalates.

¶ When sulphur is fully saturated with oxygen, it forms what is called sulphuric acid, and the salts composed with this acid are called sulphates. But when sulphur is partially oxygenized, an acid is produced called sulphurous acid, and the salts formed with it are called sulphites.

The new nomenclature enables us to distinguish between

Having shown the nature of the present chemical nomenclature as far as respects the salts, it will now be necessary to enter on the consideration of each genus separately:—Therefore, What are the generic characters of the SULPHATES?

The sulphates have generally a bitter taste; are always decomposed by the agency of a solution of barytes; and most of them afford sulphurets when heated red hot with charcoal.

Can you enumerate a few of the principal sulphuric salts?

Among the first of them, are sulphate of barytes,* sulphate of strontites, sulphate of potash, sulphate of soda,† sulphate of lime,‡ sulphate of magnesia,§ sulphate of ammonia, and sulphate of alumina and potash, commonly called alum. Besides these, sulphates of the earths, glucina, zirconia, and yttria have been formed, and their properties ascertained, but neither of them has been found useful.

What are the generic characteristics of the SULPHITES?

The sulphites have always a disagreeable sulphurous taste and smell; they are decomposed or changed by the nitric, muriatic, and some other acids which do not affect *sulphates;* if exposed to fire they yield sulphur, and become sulphates; and even by mere exposure to the action of the atmosphere, if moistened with water, they absorb oxygen, and are converted into sulphates. These salts when pure are not decomposable by a solution of barytes, as is the case with the sulphates.

Can you enumerate some of the sulphurous salts?

The principal are the sulphites of barytes, of lime, of potash, of soda, of ammonia, of magnesia, and of alumina.

What are the generic characteristics of the MURIATES?

The muriates, when acted upon by concentrated sulphuric acid, yield muriatic acid in the visible form of vapor. They are among the most volatile, and yet are the least decomposable by fire, of all the salts; not being perceptibly altered by combustibles, even when assisted by an intense heat. They are soluble in water, and are often dissolved in it for the purpose of raising the boiling point of that fluid. They evolve chlorine gas when treated with nitric acid.

Can you enumerate the chief of the muriatic salts?

The principal salts in the muriatic class, are the muriates of barytes, of potash, of soda,‖ of strontites, of lime, of magnesia, of ammonia, and the muriate of alumina.

What are the generic characteristics of the HYPEROXYMURIATES?

The hyperoxymuriates yield very pure oxygen gas by the action of fire, and are thus converted into common muriates; and the stronger acids expel the hyperoxymuriatic acid from these salts, without the assistance of heat. When mixed with combustibles, they detonate with great violence, by mere friction or percussion, and sometimes spontaneously. They are all soluble in water, and some of them dissolve readily in alcohol.

Can you enumerate the hyperoxymuriates?

The chief are the hyperoxymuriates of potash, of soda, of lime, of magnesia, of barytes, and of strontites.

What are the generic characteristics of the NITRATES?

The nitrates yield oxygen gas mingled with nitrogen gas by the action of fire; they give out a white vapor of nitric acid when acted on by concentrated sulphuric acid; and, when mixed with combustible substances, produce, at a red heat, inflammation and detonation. They are soluble in water, and capable of crystallization; and when heated with muriatic acid, chlorine is exhaled from that acid in the form of gas.

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acids which are partially oxygenized, and those which contain a maximum of oxygen. This is of great importance, because the properties of the salts formed with these acids vary as much as the acids themselves. The salts formed with acids ending in *ic* are generally permanent; whereas salts formed with the same bases combined with acids ending in *ous* are seldom permanent, but by exposure to the air attract oxygen, and are changed into salts of the former kind.

* Sulphate of barytes, or *ponderous spar* as it has been called, is abundant in different parts of the earth. Sulphate of strontites is found near Bristol and elsewhere in abundance. Sulphate of potash, sulphate of soda, and sulphate of ammonia are prepared by chemical manufacturers in many of their processes. Sulphate of lime, sulphate of magnesia, and sulphate of alumina are native productions. Sulphate of ammonia has also been found native in the neighborhood of volcanoes, and sometimes occurs among the lavas of Ætna and Vesuvius. This native production is known to mineralogists by the name of *mascagnine.*

† Crystallized sulphate of soda is composed of about 19½ per cent of soda, 24½ sulphuric acid, and 56 water. The fused salt is a compound of 44 soda and 56 sulphuric acid.

‡ In America this substance has been long used as a manure; it is coming into use in this way also in some districts in England. It is plaster of Paris.

§ Sulphate of magnesia is a compound of 33 magnesia and 67 sulphuric acid. It occurs native in the quicksilver mines of Idria, and on the surface of the soil in some districts of Spain. A native combination of sulphate of magnesia and sulphate of soda is found in a crystallized state at Sedlitz.

‖ The most important salt in this class is muriate of soda, which consists of 46.5 of dry muriatic acid and 53.5 of soda. According to the new theory, however, this salt must be considered to be a true muriate of soda only while it remains in an aqueous solution; for when it is reduced to dryness, the muriatic acid and the soda become both decomposed, and the hydrogen of the muriatic acid uniting with the oxygen of the soda, they both pass off in the form of water, while the chlorine of the muriatic acid unites with the metallic base of the soda to form chloride of sodium, which is the true character of our common salt when in a dry state.

Mr. le Goux, in his history of the cocoa-nut-tree, tells us that the inhabitants of those parts of Hindoostan and China which border on the sea-coast sprinkle their rice-fields with sea-water, and use no other manure; and that in the interior of these countries they sprinkle the lands with salt before they are tilled, and that this practice has been followed for ages with the greatest advantage.

In a conversation with the late Mr. Hollinshead, a gentleman who spent many years of a valuable life in making experiments on the employment of salt in agriculture, and in endeavoring to procure an act of parliament to sanction its use, I was informed that from one bushel to six bushel to an acre of pasture land always makes such land more productive; but that a larger quantity would for two or three years afterwards render it actually sterile.

Can you enumerate some of the nitric salts?

The more noted are the nitrates of potash,* of barytes, of soda, of strontites, of lime, of magnesia, and of ammonia.

What are the generic characteristics of the CARBONATES?

All the alkaline carbonates are soluble in water, while those of the earths and metals are nearly insoluble, unless the acid be in excess; and they all effervesce, and give out the carbonic acid, when treated with the sulphuric and some other acids.† Some of the earthy carbonates are also decomposed by mere heat without the intervention of any other substance, as is exemplified in burning lime, in which process the carbonic acid is expelled, and the base remains pure.

Endeavor to enumerate the principal carbonates, or bases combined with this acid.

The carbonates of barytes, of strontites, of lime,‡ of magnesia, of potash,§ of soda,‖ and of ammonia,¶ are the principal salts of this class; and that of lime is probably the most abundant in nature.

What are the generic characteristics of the PHOSPHATES?

The phosphates are fusible either into opaque or transparent glass, are phosphorescent at a high temperature, are soluble in nitric acid without effervescence, and are precipitable from their solutions in that acid by lime water. They are partially decomposed by sulphuric acid, but neither the earthy nor alkaline phosphates are decomposable by being heated with combustible matter.

Which are the chief phosphoric salts?

The chief of them are phosphates of lime,** of soda, and of ammonia,†† and the phosphate of soda and ammonia, formerly called microcosmic salt.‡‡

What are the generic characteristics of the PHOSPHITES.

The phosphites yield a phosphorescent flame when heated; and in a strong fire give out a portion of phosphorous, by which they become converted into phosphates. By a very strong heat they are fusible into glass; but if heated with nitre they detonate, and become converted into phosphates. A similar change is also effected in them, if they are treated with chlorine or nitric acid.

Endeavor to enumerate the principal phosphites.

The chief of them are the phosphites of lime, of barytes, of potash, of soda, and of ammonia.

What are the generic characteristics of the FLUATES?

The fluates are decomposed by sulphuric acid, yielding a vapor which corrodes glass, and which, when condensed in water, forms liquid fluoric acid. They are not decomposa-

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* Nitrate of potash (salt-petre) is generated by nature in abundance, particularly in the east: in some districts it appears in an efflorescence on the surface of the soil, from whence, at a certain season of the year, it is regularly swept off two or three times a week, and as repeatedly renewed: it appears that nothing is necessary for its production but the presence of lime, animal and vegetable matters, heat, and dry atmospheric air. The atmosphere furnishes the acid, but how the potash occurs in it, is not known with certainty.

Notwithstanding the prodigious quantity of salt-petre collected in the East Indies, it has been calculated that two-thirds of the whole are annually sent into China and other parts of Asia to make artificial fire works. The fire works of the Chinese exceed those of all other nations in variety and beauty.

At Apulia near Naples, there is a natural nitre bed, in which the earth contains 40 per cent of nitre.

In Switzerland, the farmers extract an abundant quantity of very fine salt-petre from the earth under the stalls of the cattle. The urine of quadrupeds contains much potash, and this acquires nitric acid from the atmosphere.

Nitre is used in large quantities in the manufacture of *gunpowder*, every 100 parts of which are usually composed of about 76 parts nitre, 15 charcoal, and nine sulphur.

† There are eleven species of carbonic salts at present known; only four, however, of the native earths are found combined with this acid, viz: lime, barytes, strontites, and magnesia.

‡ Carbonate of lime is not soluble in water, unless the water itself be charged with carbonic acid: it is by this means that nature effects a solution of calcareous masses, to form stalactites, and other beautiful incrustations. Native carbonate of lime is a compound of lime 56, carbonic acid 44.

§ There are two carbonates of potash, the one consisting of 68 potash and 32 carbonic acid, possessing alkaline properties; and the *bi-carbonate*, which is formed with a double portion of carbonic acid, and is incapable of changing the colour of tumeric paper.

‖ Crystallized carbonate of soda consists of soda 21½, carbonic acid 15½, and water 63. The dry carbonate of soda consists of 58½ of soda, and 41½ of carbonic acid. Whereas the bi-carbonate is a compound of 37 per cent of soda, 52½ of carbonic acid, and 10½ water.

¶ Carbonate of ammonia, or the common smelling salt, is now much used by the bakers as a substitute for yeast. It consists of one volume of carbonic acid gas and two of ammoniacal gas. The bi-carbonate is composed of one volume of each gas, and consequently is less pungent than the former. The first is composed of 56 parts of carbonic acid and 44 parts of ammonia; the latter of 72 of carbonic acid and 28 of ammonia.

** Phosphate of lime is found in bones, milk, and some other animal matters. It is white, tasteless, and insoluble in water. Entire mountains in Spain are formed of this salt. It is composed according to Dr. Wollaston of 46.5 lime and 51.5 of phosphoric acid.

†† Phosphate of lime exists also in the farina of wheat. La Grange remarks, that a person who eats a pound of farina a day, will swallow 3 pounds 6 ounces 4 drachms and 144 grains of phosphate of lime in a year. It is a curious fact, that the grain of wheat should contain phosphate of lime, while the straw, which was *not* intended for our food, should contain *carbonate* of lime only.

It is remarkable, that though phosphate of lime is always found in the urine of adults, this salt is not evacuated by infants. The rapid formation of the bones, in the first periods of life, requires that there should be no waste of any of the phosphoric salts; and nature, ever provident, has provided accordingly.

‡‡ Phosphate of ammonia is found in urine, and is also prepared by art, to be used as an ingredient in making pastes, to imitate precious stones. It is one of the best fluxes for experiments with the blowpipe.

ble by mere heat, nor altered by combustibles. Some of them are insoluble in water, and others very sparingly soluble in that fluid. Some of them possess phosphorescent properties, and all of them combine with silica when intensely heated in connexion with that earth.

Which are the chief fluoric salts?

Fluate of lime,* fluate of soda, fluate of ammonia, fluate of alumina, and fluate of silica.

What are the generic characteristics of the BORATES?

The borates are all fusible into glass, and with several of the metallic oxides, form glass of different colours. Concentrated solutions of some of the borates, especially that of soda, afford, when decomposed by the stronger acids, scaly crystals of boracic acid. None of the combustible substances have the power of decomposing the boracic salts.

Can you enumerate the boracic salts?

The principal are the borates of lime, of magnesia, and of potash, and the sub-borate of soda, which is known in commerce by the name of borax. * * * *

What are the generic characteristics of the ACETATES?

The acetates are all very soluble in water, are decomposed by the action of heat, and afford acetic acid when distilled with sulphuric acid. These salts, if exposed to the air when in a state of solution, are soon destroyed, owing to the gradual decomposition which the acid undergoes, an inconvenience which is experienced by the printers of calicoes whenever their red mordant (the acetate of alumina) has been long kept, without being properly preserved from the action of the atmosphere.

Which are the chief acetic salts?

We have the acetates of barytes, of potash, of soda, of lime, of ammonia,† and of magnesia, besides the acetate of alumina of the calico printer, just mentioned.

What are the generic characteristics of the OXALATES?

The oxalates are decomposable by a red heat, and those which are soluble in water are decomposed also by lime or barytes water, and the precipitated oxalate is soluble in an excess of oxalic or of most other acids.

Can you enumerate the principal oxalic salts?

Oxalate of lime, of barytes, of strontites, of alumina, of magnesia, of potash, of soda and of ammonia.

What are the generic characteristics of the TARTRATES?

When the tartrates are exposed to a red heat, the acid is decomposed, and the base remains. The earthy tartrates are less soluble than the alkaline, but all are capable of combining with another base, and forming triple salts. The tartrates are also capable of combining with an excess of acid, and thus forming what are called super salts, of which common tartar or super-tartrate of potash is a well known instance.

Can you enumerate the principal tartaric salts?

The principal of them are the tartrates of lime, of strontites, and of potash; and the tartrates of potash and ammonia, and of potash and soda, commonly called Rochelle salt.

What are the generic characteristics of the CITRATES?

The citrates are decomposed by the strong mineral acids; they yield traces of acetic acid when distilled, and the oxalic and tartaric acids decompose them, producing an insoluble precipitate in their solutions. The aqueous solutions of these salts are not permanent, but are liable to be decomposed by age.

Which are the principal citrates?

The citrates of lime,‡ of barytes, of potash, of soda, and of ammonia.

What are the generic characteristics of the CAMPHORATES?

The camphorates have generally a bitterish taste, they are decomposable by heat, and burn with a blue flame. The camphorate of potash and some other of these salts crystallize very readily.

Which are the principal camphorates?

The camphorates of lime, of potash, of soda, of barytes, of ammonia, of alumina, and of magnesia. * * *

What are the principle prussiates?

The prussiates, or triple prusiates of potash, soda, lime, or ammonia, with iron: that of potash was formerly called prussian alkali.

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* Phosphate of soda and ammonia is also found in human urine, from whence it may be procured by evaporation in the state of a triple salt.

According to some modern experiments, it appears that fluoric acid forms a part of the human teeth. It may be conjectured that this was a contrivance of nature, to give more durability to those important organs than they would have had by phosphate of lime only.

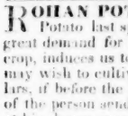
† A solution of acetate of ammonia has been used from a very early date in Pharmacy, under the name of *Mindererus's spirit*. It is not crystallizable, for, if evaporated with that intention, it volatilizes entirely.

‡ Citrate of lime is now formed in this country in large quantities, as a preliminary process in preparing the citric acid in a crystallized state. According to Vauquelin, it is composed of 63 acid and 37 lime. From actual experiment I have found that 100 gallons of good lemon juice will generally produce 90 pounds of dry citrate of lime well saturated.

ROHAN POTATOES—The high price of the Rohan Potato last spring, (from $10 to $20 per bushel,) the great demand for them, and their intrinsic value as a farm crop, induces us to give this early notice to the farmers who may wish to cultivate them, that on the receipt of five dollars, if before the 1st of Nov. we will forward to the address of the person sending it, in the manner he shall direct, and at his charge, one barrel of the Rohans, which will probably suffice to plant an acre of ground. J. BUEL.

Seeds of Evergreens.

WE want to purchase for our friends in the west, a quantity of seeds of the Balsam Fir, Spruce, Hemlock, White Cedar, or Arbor Vitæ, and of the White Pine, and will pay for them a liberal price. In the next Cultivator we will endeavor to suggest the time, and the manner at and in which these seeds should be collected and preserved.



FOR SALE—TWO SOUTH-DOWN BUCK LAMBS.—The subscriber imported, in the fall of 1837, two ewes and a buck, selected from the Earl of Leicesters flock, (Holkham,) of which the above is the progeny. Near Dobb's Ferry, Pa. July 26, 1839.

Sept-4f JAMES A. HAMILTON.

ALBANY SEED STORE, GARDEN and AGRICULTURAL SEEDS, IMPLEMENTS, TOOLS, &c. kept constantly for sale at his Seed Store, 317 North Market-street, wholesale and retail, consisting of a large assortment. It is the intention of the proprietor to test all seeds of which there is any doubt respecting their vitality, by sowing a few seeds in a small pot, before offering them for sale. And purchasers can test for themselves, any seeds of which they are distrustful, by sowing a few in a box of fine earth, and placing it in a warm room, exposed to the sun, where, if kept moist, the seed, if good, will vegetate in a reasonable time. In all cases where seeds prove to be bad, they will be replaced by others, or any reasonable satisfaction made. The proprietor has enlarged his establishment and increased his supplies, and with his experience in the business, together with his facilities for obtaining supplies, through Mr. GEORGE C. THORBURN, and his extensive correspondence and facilities for obtaining seeds, he flatters himself he will be able fully to meet the wishes and expectations of the public, and make the *ALBANY SEED STORE and AGRICULTURAL REPOSITORY* worthy of the high character it has already attained.

Persons ordering Seeds and Implements from a distance, with whom I am unacquainted, without remitting payment, are expected to give references in this city or New-York.

Sept-tf WILLIAM THORBURN.

GREAT SALE of IMPROVED SHORT-HORN CATTLE AND BLOOD HORSES.—The subscribers will sell at auction, on *Tuesday the 10th day of September next*, at the farm of Samuel Allen, on the Niagara river, two miles below Black-Rock, the entire stock of Imported Short-Horn Cattle, for several years past bred on the farm of L. F. Allen, on Grand-Island.

The herd consists of about thirty, including Cows, Bulls, Heifers and Calves. Several of them have been imported by one of the subscribers, direct from England, and with their produce, are surpassed by few animals in the country. In addition to these, every animal offered is the direct descendant of thorough bred imported stock, and of unquestionable purity of blood.

With the above will be sold twenty select and beautiful animals, consisting of pure Devon; crosses of different degrees between the Devon and Improved Short-Horns; crosses of the Alderney and Ayreshire with the Short-Horns. These are Cows, Heifers and Calves, all superior animals.

ALSO—The superb horse "BELLFOUNDER," got by imported Bellfounder, the best thorough-bred trotting horse ever in America, and out of the imported mare Lady Allport, bred by T. T. Kissam, Esq. of Long-Island. The stock of this horse is unsurpassed in the country for size, speed and action—together with several elegant, thorough-bred breeding mares and fillies, and two or three young horse colts, the produce of the above. These animals are of the highest character as roadsters, and as trotters, no blood in the country has excelled them. They are all from the best stables of Long-Island. Also, a beautiful pair of full-bred matched fillies, five years old. All these horses are blood bay.

This entire stock will be sold without reserve, to the highest bidder, commencing at 10 o'clock A. M. They can be shipped within an hour from the farm, on board the steamboats to go up the Lakes, or on board canal boats at the farm.

Catalogues of the animals, with descriptions and pedigrees, will be prepared, and the stock may be viewed at the farm previous to the sale. A credit of sixty days will be given on approved notes or acceptances, payable at a bank either in Buffalo, Albany, or New-York, for all sums over $300.

SAMUEL ALLEN. LEWIS F. ALLEN.

Black-Rock, N. Y. June 25, 1839.

IMPROVED DURHAM SHORT-HORNS.—Mr. WHITAKER'S third sale of high bred improved Short-Horns, by the ship Napier, will be held at Powelton, near Philadelphia, on Friday Sept. 20, 1839, at 10 o'clock A. M.

The subscriber is authorised by Col. Powell to say, that all the best cattle which he has at any time imported, and the improved short-horns which he considered the best in England, were either in Mr. Whitaker's possession, or were derived from his fold. Col. Powell has not the slightest interest in Mr. Whitaker's sales. Philadelphia, July 15, 1839.

18 C. J. WOOLBERT, *Auctioneer.*

NEW-YORK URATE AND POUDRETTE COMPANY, not incorporated, but carried on by individual enterprise. The manures are not divided among the stockholders, as are those belonging to another establishment, but sold to applicants for cash on delivery. Orders are supplied in the order of time in which they are received. Urate 50 cents and Poudrette 40 cents per bushel, with contingent charges for bags or barrels, &c.

The company are daily preparing for use, during the warm dry weather, the materials collected during the past winter, and will have several thousand bushels ready before the first of October next. The material is disinfected and rendered free from offensive smell by a compound, every part of which is in itself a good manure. The experience of the past and present year, 1838 and 1839, on Long Island, has satisfied many of the farmers that these manures have the quickest operation upon vegetable matter, producing greater abundance, and the cheapest of any manure they have ever tried.

Amended instructions for their use, the result of practical experience, will be furnished on application. The effect of Poudrette upon grape vines and morus multicaulis is beyond all comparison. This company are erecting large and extensive works in the vicinity of the city of New-York to prepare the manures; and farmers and gardeners may confidently rely on a supply. Orders, post paid, directed to "The New-York Urate and Poudrette Company," box number 1,211, post-office, New-York, or sent to the store of STILLWELL & DEY, number 365, Fulton-street, Brooklyn, will be attended to. *New-York, July* 17, 1839.

The company will be very much obliged to gentlemen who have used the manures, to give them a statement in writing what has been the result of their use and experiments in relation to them. aug-4t.

AGRICULTURAL WAREHOUSE and SEED STORE, 79 Barclay-street, New-York. At this old established stand, the subscribers take pleasure in announcing to the public, that they have made extensive arrangements to accommodate farmers in all articles connected with husbandry, viz:—Agricultural implements, a full and fresh supply of Field and Garden Seeds, Fruit Trees, Durham Cattle, Chinese and Berkshire pigs, 10,000 morus multicaulis mulberry trees, publications on rural subjects, &c.

July-5t J. W. WEAVER & Co. 79 Barclay-st. N.Y.

FOR SALE—A Splendid Country Seat in the Highlands, on the Hudson River. That beautiful country residence, known by the name of the BEVERLY ESTATE, containing four hundred acres of land, about two hundred of which are fine level arable soil, of an excellent quality, in a good state of cultivation, and not surpassed by any on the river for fertility; the remainder is fine and thrifty timber land. The situation is the most eligible on the Hudson, extending one mile and a half on the river, with a bold shore and convenient dock, nearly opposite West-Point, and within fifty miles of New-York. The prospect is extensive and diversified, reaching from St. Anthony's Peak on the south, to the bay and city of Newburgh on the north. This estate can conveniently be divided into three farms, giving an equal proportion of front on the river, and of arable and timber land to each. Almost every enclosure is supplied with living springs of the purest water. There is on said estate a plain house, (formerly the head-quarters of Gen. Arnold;) also out-houses necessary to carry on the business of the farm. The single fact that during the whole time the cholera raged throughout the state, not one case occurred within ten miles of this place, is sufficient to prove the unrivalled salubrity of the situation. The facilities of intercourse with the city, that can be reached in four hours, by means of numerous steam-boats, are great, and daily increasing, both as regards pleasure, and the convenience of a near market for produce of every description.

For conditions of sale, apply to STEPHEN A. HALSEY, 189 Water-street, New-York, or RICHARD D. ARDEN, on the adjoining farm. Ardena, 23d April, 1839 j6t

Moneys received between the 24th June and 1st of August, in sums of $5 and over. The total receipts are included from post-offices marked with an asterisk.

	No. Vols.		No. Vols.
Averysborough,	N.C. 6	Mocksville,	N.C. 41
*Augusta,	Ga. 55	Mount Sterling,	Ky. 5
*Auburn,	Va. 9	Milwood,	Va. 22
*Brandenburgh,	Ky. 7	*New-York city,	280
*Baltimore,	Md. 107	Nicholasville,	Ky. 29
Belleville,	Ill. 22	New-York mills,	N.Y. 27
*Buffalo,	N.Y. 19	*Nashville,	Tenn. 71
Brockville,	U.C. 8	New-Haven,	Ct. 5
*Birmingham,	O. 12	Orlean,	Va. 5
*Boston,	Mass. 168	*Poughkeepsie,	N.Y. 21
Chesnut Grove,	S.C. 7	Pine Lake,	Mich. 11
*Cambridge,	Md. 22	Peoria,	Ill. 39
*Chillicothe,	O. 8	Pittsylvania C. H.	Va. 5
Chatham,	N.Y. 5	Port Deposite,	Md. 17
Dorset,	Vt. 5	Plymouth,	Ia. 5
*Dayton,	O. 64	*Plainfield,	N.J. 8
*Danville,	Pa. 18	*Rhinebeck,	N.Y. 29
*Detroit,	Mich. 29	*Roscoe,	Ill. 65
Deep River,	Ct. 6	Schoolcraft,	Mich. 6
Ellicotville,	N.Y. 6	Shelbyville,	Mass. 6
*Ellsworth,	O. 85	*Stony Point Mills,	Va. 26
East Wareham,	Mass. 7	*Springfield,	" 38
Elgin,	Ill. 1	Steeles,	S.C. 5
East Greenwich,	R.I. 4	*Springfield,	Mass. 40
Frankfort,	Ky. 22	Terre Haute,	Ia. 17
Gold Hill,	Ala. 5	Victoria,	L.C. 8
*Hartford,	Ct. 61	Westport,	Ct. 5
Heathsville,	Va. 10	*Wawarsing,	N.Y. 11
*Huntsville,	Ala. 43	*Westport,	Ky. 8
Indiantown,	Ill. 5	Wrentham,	Mass. 5
Jackson C. H.	O. 12	Wheeling,	Va. 7
Leonardstown,	Md. 12	Williamsburgh,	Mo. 11
*Lake C. H.	Ia. 28	Woodstock,	Ct. 6
Louisville,	Va. 5	Watertown,	Mass. 5
Laporte,	Ia. 11	Waynesboro,	Va. 5
*Mount Vernon,	Ia. 50	*Washington city,	D.C. 47

PRICE CURRENT.

ARTICLES.	New-York, August 5.	Boston, August 3.	Philadelphia August 3.	Baltimore, August 3.
Beans, white, per bushel,	2 00— 2 25	1 75— 2 00		1 75— 2 00
Beef, per cwt.	6 00— 7 50	7 50— 8 25		7 00— 8 50
Bacon, western, per lb.	0 11— 0 12			0 11— 0 12
Butter, fresh, per lb.	0 16— 0 23	0 22— 0 25		
Cheese, per lb.	0 08— 0 13	0 12— 0 16		
Cotton, best per lb.	0 10— 0 14	0 09— 0 11		
Flour, best, per barrel,	6 00— 7 50	5 87— 6 50		5 50— 6 00
Grain—Wheat, per bushel,	1 25— 1 35	1 25— 1 33		1 25— 1 33
Rye, per bushel,	0 85— 0 90	0 90— 0 93		0 82— 0 90
Oats, per bushel,	0 41— 0 52	0 35— 0 38		0 29— 0 32
Corn, per bushel,	0 81— 0 86	0 75— 0 80		0 70— 0 75
Hams, per lb.	0 12— 0 13	0 11— 0 12		0 11— 0 12
Pork, in bbl. per cwt.	7 00— 9 00	9 00— 11 00		7 50— 9 00
Seeds—Red Clover, per bushel,	4 50— 5 00	4 50— 5 00		4 50— 5 00
Timothy, per bushel,	2 50— 3 00	3 00— 3 50		2 50— 3 00
Wool—Saxony, fleece, per lb.	0 55— 0 60	0 55— 0 60		0 55— 0 60
Merino, per lb.	0 50— 0 52	0 45— 0 47		0 45— 0 47
¼ and common, per lb.	0 37— 0 40	0 33— 0 35		0 33— 0 35
Sheep, per head,	1 50— 5 50	1 25— 3 50		1 50— 3 25
Cows and Calves, each,	15 00— 35 00	17 00— 50 00		20 00— 35 00